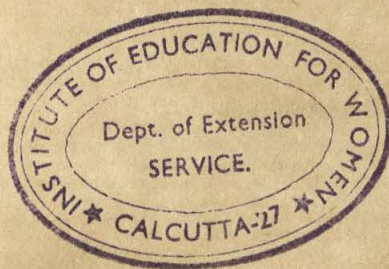




THE
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WORLD BOOK

A CONCISE HISTORY OF THE WORLD

JK

Volume 10



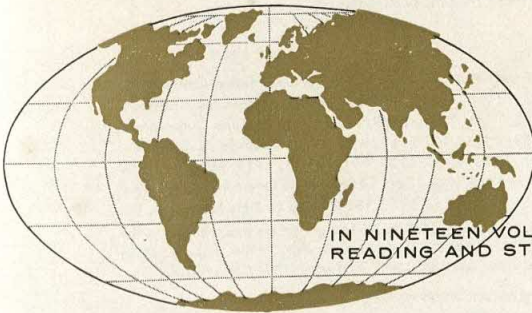
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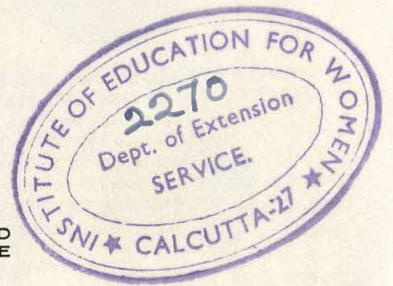
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Volume 10



IN NINETEEN VOLUMES AND
READING AND STUDY GUIDE

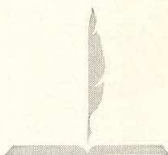


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Ji is the tenth letter of our alphabet, and was the last to be added. It developed from the letter *I*, which was the tenth letter in the alphabet used by the Semites, who once lived in Syria and Palestine. They probably adapted an Egyptian *hieroglyphic*, or picture symbol, for *hand* to represent the letter, but the resemblance is slight. The ancient Greeks used the letter and passed it on to the Romans. In the late Middle Ages, when two or more *i*'s were written together, scribes often added a long tail to the last one. Later, the tail was used to indicate an initial *I*. During the 1600's, an *i* at the beginning of a word was written with a tail. The *j* developed from these forms, and became a symbol for the consonant *j*, as in *joy*. See ALPHABET.

Uses. *J* or *j* ranks as the 24th most frequently used letter in books, newspapers, and other printed material in English. In *J.P.*, or Justice of the Peace, it stands for *justice*; and in *J.D.*, or Doctor of Laws, for the Latin *juris*, or *laws*. Jewelers use *j* to indicate *jewels* in watches.

Pronunciation. In English, a person pronounces *j* by placing his tongue below the edges of his lower front teeth. He forces out his breath, and his vocal cords vibrate. The normal sound of *j* in English is the one in *jam*. Occasionally, *j* has a *y* sound, as in *hallelujah*, and in Latin, German, and Scandinavian languages. In Spanish, *j* has the sound of *h*. In French, it is roughly like *sio* in the English word *adhesion*. See PRONUNCIATION.

I. J. GELB and J. M. WELLS



The tenth letter developed from the letter *I*. When *I* appeared in certain positions, scribes added a tail to it. Eventually, the letter became the consonant *J*.

Medieval Scribes first began using *J* for *I*.



The Small Letter *j* first appeared in medieval times, about A.D. 1200. It developed from the small letter *i*.

i j TODAY
A.D. 1200

The Romans gave the letter *I* its capital form about A.D. 114.

The Greeks, about 600 B.C., wrote the letter as a single stroke and called it *iota*.

The Phoenicians changed the Semitic letter about 1000 B.C., and they named it *yod*, for *hand*.

The Semites simplified the Egyptian symbol about 1500 B.C.

The Egyptians, about 3000 B.C., wrote with a symbol meaning hand, the basis for letters *I* and *J*.



Santa Catalina Island Co.

The Jabiru Wades in the Swamps of South America.

JABIR. See GEBER IBN-HAYYAN.

JABIRU, *JAB uh roo*, is a stork which lives in South America. The jabiru is about 5 feet long, with a wing-spread of about 7 feet. It has a huge bill a foot long. The jabiru's plumage is pure white. The bill and legs, as well as the head and neck, are all black, except for a reddish ring of skin around the lower neck. Jabirus feed on frogs, fishes, and other water animals. See also STORK.

Scientific Classification. The jabiru is in the family *Ciconiidae*. The South American jabiru is genus *Jabiru*, species *mycteria*.

ALFRED M. BAILEY

JACAANA, *ZHAH suh NAH*, is a small wading bird of the tropics, with remarkably long toes and nails. It is related to the plover, and resembles the gallinule in appearance and habits. The long toes permit the jaçana

Jaçanas have extremely long toes and claws which make it possible for them to run across water-plant leaves without sinking.

Arthur W. Ambler, NAS



Western Ways

Jacaranda Trees Require a Warm or Tropical Climate.

to run easily over the floating leaves of large water plants, when it searches for food.

An Oriental jaçana, called the *surgeon bird*, has a long tail like a pheasant's. This bird is brownish above and purplish below. It also has a white head and white wings.

An American jaçana lives in the tropics and as far north as Texas. It has purplish-chestnut feathers. In the bend of each wing is a strong spur, which the bird uses as a weapon.

Scientific Classification. Jaçanas belong to the family *Jacaniidae*. The American jaçana is genus *Jaçana*, species *spinosa*, subspecies *gymnostoma*.

ALFRED M. BAILEY

See also PLOVER.

JACARANDA, *JACK uh RAN duh*, is a beautiful flowering tree native to Brazil. It is widely used for planting along streets in Florida, southern California, and other warm parts of the United States. The blue or violet-colored flowers grow in clusters. The leaves are finely cut, like ferns. The jacaranda sometimes grows as a shrub. It is grown from cuttings.

Scientific Classification. Jacarandas belong to the family *Bignoniaceae*. There are about 50 species. The jacaranda most commonly grown is genus *Jacaranda*, species *ovalifolia*.

JACK BOOT. See SHOE (History).

JACK CADE'S REBELLION. See HENRY (VI) of England.

JACK FROST is the imaginary sprite who is supposed to trace the beautiful patterns that frost makes on trees, windows, and other objects. He appears in many nursery rhymes and stories as an elflike character representing nipping cold.

This legendary sprite probably originated in Scandinavia. In Norse mythology, Kari, god of the winds, had a son named Jokul or Frosti. *Jokul* means *icicle* and *Frosti* means *frost*. Frosti had a son named *Snjo*, meaning *snow*. In Russia, the frost is represented as a white old man, Father Frost, a mighty smith who binds the earth and waters with his chains. In German tales, frost sometimes appears as an old woman. When Old Mother Frost shakes her bed, white feathers fly, and then snow begins to fall.

ARTHUR M. SELVI

JACK-IN-THE-PULPIT is an American wild flower which grows in moist woodlands and thickets. It is found from Nova Scotia south to the Gulf States, and as far west as Minnesota. This plant is also called *Indian turnip*. It belongs to the arum family, and is a relative of the marsh calla.

Jack-in-the-pulpit has been well named. The part that looks like the preacher is the slender stalk called the *spadix*. The tiny greenish-yellow flowers grow in a club-shaped spike on the upper part of this stalk. The "pulpit" is a leaflike growth which encloses the spadix like a trumpet. This part, the *spathe*, has a broad flap that extends up and over the spadix. It resembles the sounding board behind and over a pulpit. The spathe is pale green, striped with purple and brownish lines.

The oddly shaped flowers of this plant bloom from April to June. They produce clusters of smooth, red berries. The plant grows from a turniplike root filled with a burning juice. Sometimes this juice is used in homemade cough medicine. The root is tasteless when boiled, but is a nourishing food.

Scientific Classification. Jack-in-the-pulpit belongs to the family *Araceae*. It is classified as genus *Arisaema*, species *triphillum*.

PAUL C. STANDLEY

See also ARUM; FLOWER (color picture, Flowers of the Woodland).

JACK-O'-LANTERN is a name usually given to a hollowed-out pumpkin which has eyes, nose, and a mouth carved in one side. Jack-o'-lanterns are usually made on Halloween, and a candle or other light is placed inside the pumpkin. The term has also been given to the light that frequently shines from rotting stumps or logs in swampy land. Saint Elmo's Fire is sometimes called jack-o'-lantern.

JACK RABBIT is the name for several large hares of North America. They range over the plains from Canada south through Washington and Nebraska to

JACKAL

Mexico. These rodents, or gnawing animals, have long ears and long hind legs. They multiply rapidly. In large numbers, jack rabbits can be harmful to crops and animal feed.

The *white-tailed* jack rabbit is also called the *prairie hare*. It lives from the Mississippi River to California. In winter, the animal's whole coat may turn white. Other jack rabbits do not change color in this way. They include *white-sided* and *black-tailed* groups.

Scientific Classification. Jack rabbits are members of the family *Leporidae*. They are genus *Lepus*. The white-tailed jack rabbit is species *townsendi*, the white-sided is *alleni*, and the black-tailed is *californicus*.

STANLEY P. YOUNG

See also HARE.

JACK SALMON. See PERCH.

JACKAL, JACK *awl*, is a kind of wild dog which lives in Asia, Africa, and southeastern Europe. Its long and mournful cry is heard mostly at night. Arabs call the jackal "the howler."

The common jackal looks more like a fox than a dog. It is grayish-yellow or brown, and has a bushy tail about 8 inches long. This animal is about 14 inches high from the shoulder to the ground. It is 2 to 2½ feet long.

Jackals hunt in packs at night. People once thought that jackals hunted prey for the lion and ate what the lion left. This is not true, but the animal does eat decaying flesh. Because jackals have a bad smell they are considered very poor pets, even though they can be tamed easily.

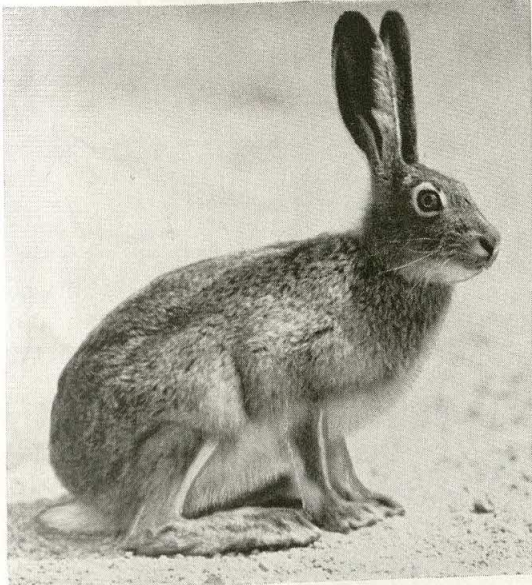
The black-backed jackal of Africa is prized for its fur, which is more attractive than that taken from the common jackal.

Scientific Classification. Jackals are in the family *Canidae*. The common jackal is genus *Canis*, species *aureus*; the black-backed is *C. mesomelas*.

HAROLD E. ANTHONY

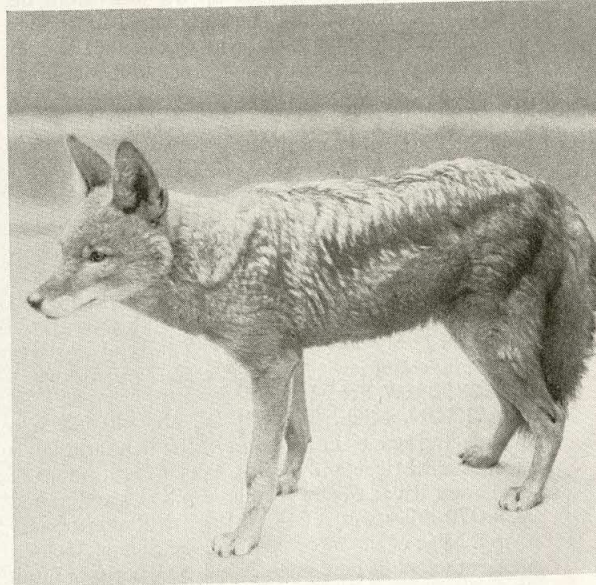
The White-Tailed Jack Rabbit of the western plains has long ears and powerful hind legs.

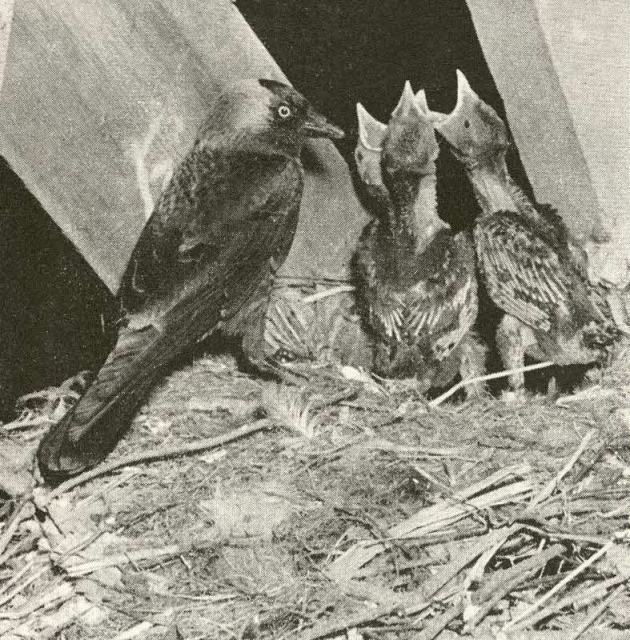
J. C. Allen



The Black-Backed Jackal of Africa has a black saddle that contrasts sharply with the reddish-brown color of its fur.

N.Y. Zoological Society





Eric Hosking, NAS

The Jackdaw can learn to imitate sounds. It is an amusing pet, and often hides bright objects that attract its attention.

JACKDAW is a common crow of Europe and north Africa. It is dusky black in color, with a grayish fringe around the neck. It grows about 14 inches long. The jackdaw is a sociable bird and often stays in towns and villages. It builds its nest in towers or holes in trees. Jackdaws make intelligent pets, but are mischievous, like crows. A favorite trick of jackdaws is to carry away and conceal any small bright objects that attract their attention.

Scientific Classification. The jackdaw belongs to the family *Corvidae*. It is classified as genus *Corvus*, species *monedula*.

GEORGE E. HUDSON

JACKS, or **JACKSTONES**, is the name of a children's game played with small metal objects called *jacks*. The object of the game is to pick up the jacks from the ground while tossing and catching a ball or another jack. Children usually play jacks with a ball and six jacks. Players take turns trying to do a number of stunts without a miss.

The first player to complete the stunts wins the game. Some of these stunts are called *Downs and Ups*, *Eggs in Basket*, *Upcast*, and *Downcast*. Jacks without a ball is faster and more difficult. Ten jacks are usually used. Stunts are performed while one jack is being tossed in the air. Some of the stunts are *Over and Back*, *Scatters*, *Pigs in the Pen*, and *Sweeps*. Players today use metal jacks with six points. An older game was played with knucklebones of sheep or other small animals. Both games probably came from *Pebble Jackstones*, which is still played in European countries.

BERNARD S. MASON

JACKSCREW. See MACHINE; SCREW.

JACKSON, Mich. (pop. 50,720; alt. 940 ft.), is a manufacturing city in the heart of the rich farm lands of southern Michigan. Jackson lies on both banks of the Grand River, about 37 miles south of Lansing and about 70 miles west of Detroit (see MICHIGAN [color map]). Most of the more than 150 factories of Jackson make automobile equipment, airplane wheels, or furni-

ture. The city is also an important transportation center, located on the main line of the New York Central Railroad. On July 6, 1854, the Republican party was formally named at a convention held in Jackson. Jackson has a community college. The state prison of southern Michigan is located north of the city. Illuminated cascades at Jackson attract summer visitors. The first permanent settlement was made in 1829, and the site was named for General Andrew Jackson. Jackson was incorporated as a city in 1857. It has a commission government, and is the seat of Jackson County.

WILLIS F. DUNBAR

JACKSON, Miss. (pop. 144,422; alt. 298 ft.), is the capital and largest city of the state. It lies on the west bank of the Pearl River in central Mississippi (see MISSISSIPPI [map]). It is often called *The Crossroads of the South*, because of its central location. Jackson serves as a distribution, financial, manufacturing, and transportation center. Many major oil companies have district offices in Jackson, because of nearby gas and oil fields. Factories produce crushed cottonseed, farm implements, fertilizer, fluorescent lamps, furniture, garments, and glass bottles.

The city has over 30 public schools. Belhaven, Jackson State, and Millsaps colleges, and the University of Mississippi Medical Center are in the Jackson area. Six

Jackstones Is a Popular Game for young girls. In ancient times, children played the game without a ball. They used pebbles or knucklebones in place of the metal jacks used today.

H. Armstrong Roberts



Jackson, Miss., is one of the most important transportation and manufacturing centers in the state. The state Capitol, left background, completed in 1903, closely follows the design of the national Capitol in Washington, D.C.



Jackson Chamber of Commerce

radio stations, two television stations, and three daily newspapers serve Jackson. The city also has a symphony orchestra, an art gallery, eight libraries, and over 800 acres of parks and playgrounds. Nine rail lines, two airlines, and many bus and freight lines provide transportation.

Jackson began as LeFleur's Bluff, a trading post established by Louis LeFleur on the west bank of the Pearl River around 1780. In 1820, the state legislature appointed a commission to locate a state capital nearer to the center of the state than the temporary capital at Columbia. In 1821, LeFleur's Bluff was chosen and named in honor of Andrew Jackson. The legislature held its first session in the new capital in 1822. Jackson was invaded three times by Union forces during the Civil War, and burned by General Sherman and his troops in 1863.

One of the two seats of Hinds County, Jackson has a commission type of government.

CHARLOTTE CAPERS

JACKSON, ALEXANDER YOUNG (1882-), a Canadian landscape painter, was one of the original members of the group of Toronto artists, who, during the 1920's and early 1930's, called themselves "The Group of Seven."

These artists tried to portray the glories of the Canadian Northland, and they produced many artistic works in fresh, bold colors. Jackson himself explored this country for 20 years. By the late 1940's, the influence of the group had declined greatly. But Jackson and his fellow artists had stirred the imagination of countless Canadians and opened their eyes to the wonders of the Canadian landscape.

Jackson was born in Montreal. He studied first at evening classes of the Council of Arts and Manufactures in Montreal. Later, he studied at the Art Institute of Chicago and the Julian Academy in Paris. In 1911 and 1912, Jackson traveled and sketched in Italy and France.

W.R. WILLOUGHBY

National Gallery of Canada, Ottawa

Alexander Jackson's brilliant landscape, *Algoma Lake*, is one of the many pictures that he painted to show the beauty and majestic grandeur of the Canadian northland.



Andrew Jackson

7TH PRESIDENT OF THE UNITED STATES 1829-1837



MONROE
5th President
1817—1825



J. Q. ADAMS
6th President
1825—1829

JACKSON, ANDREW (1767-1845), was the first President born in a log cabin. Earlier Presidents had come from well-to-do families. Jackson, the son of poor Scotch-Irish immigrants, became an orphan at 14. He grew up on the frontier of the Carolinas. Then he moved to Tennessee, where he became a successful lawyer and landowner. Jackson won fame as an Indian fighter and as a general in the War of 1812. He was nicknamed "Old Hickory" because of his toughness.

Jackson was one of the founders of the Democratic party. He won election as President because of the growing political power of new states on the frontier. He had the support of farmers and workingmen. Jackson had a great influence on American political life. Earlier Presidents generally had not provided strong leadership. They did not appeal to the people over the heads of Congress. Jackson insisted that American democracy could work only if the President provided such leadership. He believed that the President should use his constitutional powers to the fullest limit. Jackson vetoed more bills than all the Presidents before him put together. He stood ready to argue with Congress or the Supreme Court in the name of all the people. His slogan was: "Let the people rule."

The 20-year period after Jackson became President is often called the *Age of Jackson*. It has been described as the years of "the rise of the common man." Under Jackson's leadership, his followers tried to win reforms in the states. They demanded state regulation and inspection of banks. They fought for the right of workers to organize labor unions, and called for a 10-hour workday. They sought adoption of the secret ballot in elections. When Jackson began his second term in 1833, he became the first President who had been nominated by a national political convention.

During Jackson's presidency, the opening of land in the West sped up the westward movement. Wild speculation on land, roads, canals, and cotton led to a business depression in the late 1830's. William Lloyd Garrison organized the first society favoring an end to slavery. The *New York Sun* became America's first successful penny newspaper. Peter Cooper built the first American steam locomotive, and Jackson became the first President to take a train ride. Sarah J. Hale published her poem "Mary Had a Little Lamb."

Early Life

Boyhood and Education. Andrew Jackson was born on March 15, 1767, in either North Carolina or South

Carolina—no one really knows which. Jackson believed he was born on the farm of his uncle, James Crawford, near Waxhaw, S.C. (The town is now in North Carolina.) The Crawford house stood on the west side of the road that formed the boundary between North Carolina and South Carolina at that time.

Jackson's parents, Andrew and Elizabeth Hutchinson Jackson, were a poor farm couple from Northern Ireland. They had sailed to America in 1765 with their first two sons, Hugh and Robert. The elder Jackson built a log cabin and started farming. He died in 1767, a few days before Andrew, their third child, was born. Mrs. Jackson and the boys moved into the log cabin home of the Crawfords. Mrs. Jane Crawford was Mrs. Jackson's sister. It was a noisy household, with eight Crawford children and the three Jackson youngsters.

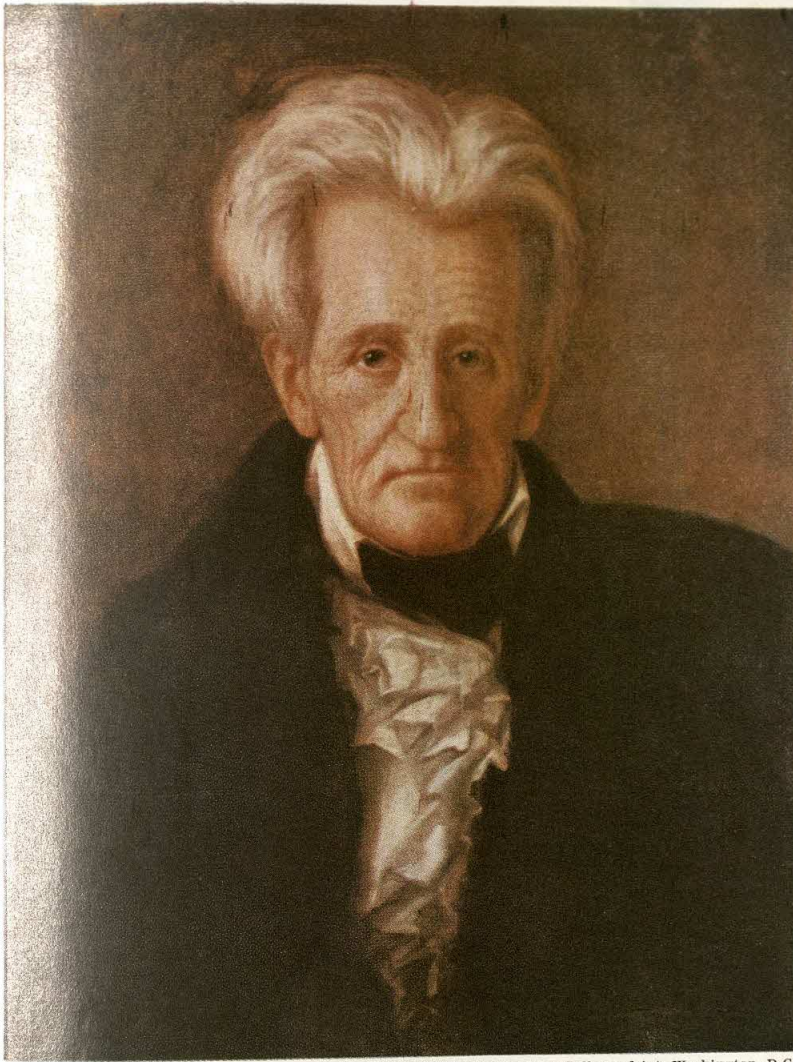
Andrew, a sandy-haired boy with freckles, had a quick temper. He grew up among people who were ready to fight at any time to defend their honor. This led him into many fights. Any boy who dared to play a practical joke on Andrew found himself challenged to a battle. A schoolmate later recalled that Andrew would "never give up," even when another boy had him on the ground. Andrew attended school in the Waxhaw Presbyterian Church. His mother hoped he would become a minister.

In those days, most farm communities had "public readers" who read aloud items from the Philadelphia newspapers. Andrew later recalled that he was "selected as often as any grown man" to be the reader. In 1776, at the age of 9, he read the newly adopted Declaration of Independence to his neighbors.

At the age of 11, Andrew was sent to a nearby boarding school. He studied reading, writing, grammar, and geography. But sports and cockfighting occupied more of his time than did studying. He wrote a "Memorandum" on "How to feed a cock before you fight."

The Revolutionary War. In 1780, British troops invaded the Southern Colonies. The Jacksons and Crawfords fled from Waxhaw. The 13-year-old Andrew and one of his brothers, Hugh, joined the mounted militia of South Carolina. Andrew, an orderly, saw little actual fighting. He took part in one battle in which his uncle, James Crawford, was wounded and Hugh was killed.

In April, 1781, a British raiding party captured Andrew and his other brother, Robert, who had also joined the militia. The British commander wanted his boots cleaned, and ordered Andrew to scrub them. The boy refused, arguing that he had rights as a prisoner of



In the Collection of The Corean Gallery of Art, Washington, D.C.



VAN BUREN
8th President
1837—1841



W. H. HARRISON
9th President
1841

Jackson lay near death when George P. A. Healy painted this portrait of "Old Hickory."

war. The angry officer lashed out at Andrew with his sword, and the youth threw up his left hand to protect himself. The blade slashed Andrew's hand to the bone and cut him badly on the head. He carried scars from the wounds for the rest of his life.

The British officer forced Andrew and Robert to march 40 miles to a military prison at Camden, S.C. The brothers caught smallpox there. In an exchange of prisoners, Elizabeth Jackson obtained the freedom of her sons. But Robert soon died. Mrs. Jackson also caught smallpox and died. Andrew, his face scarred by the disease, was an orphan at the age of 14. "I felt utterly alone," he later recalled.

After the Revolutionary War, Andrew found little to interest him in school. His grandfather, a merchant in Northern Ireland, left him 300 pounds, a substantial amount of money. Andrew might have used the money to establish himself in business, to develop the farm he had inherited, or to go to college. Instead, he wasted it gambling on horse races and cockfights. In 1783, he taught school for a short time near Waxhaw.

Lawyer. Jackson spent Christmas of 1784 in Salisbury, S.C. There he met Spruce Macay, a wealthy lawyer. Jackson persuaded Macay to let him study law in his office. But he soon established a reputation as "the most roaring, rollicking, game-cocking, horse-racing, card-playing, mischievous fellow that ever lived in Salisbury," according to an old-time resident of the town. Professional standards for lawyers were not high in those days, and Jackson was admitted to the bar in 1787 at the age of 20.

In 1788, John McNairy, judge of the Cumberland superior court, appointed Jackson solicitor, or attorney general, for the region that now forms Tennessee. The two men had studied law under Macay and had become close friends. On his way to Nashville, Jackson stopped briefly at Jonesborough (now Jonesboro) to take part in a civil suit. He accused the opposing lawyer, Waightstill Avery, of taking illegal fees, and challenged him to a duel. The argument ended with both men firing their pistols into the air.

Thousands of settlers had moved into Nashville after



Jackson's Boyhood Home was a log cabin, above, in Waxhaw, S.C. No picture of his birthplace is known to exist. When Jackson was only 13, he fought in the Revolutionary War. The British captured him in 1781. When the boy refused to clean the boots of a British officer, the soldier struck Jackson with his sword, right.



Library of Congress

the Revolutionary War. Many refused to pay their bills and ignored the law. Jackson sent many debtors and other law violators to jail. His success as a public official brought him a large private law practice.

Jackson's Family. Jackson lived in the Nashville boardinghouse of Mrs. John Donelson, a widow. He became attracted to her daughter, Mrs. Rachel Donelson Robards (June 15, 1767–Dec. 22, 1828). The dark-eyed Mrs. Robards was separated from her husband, Captain Lewis Robards, an army officer. After frequent quarrels with her husband, Mrs. Robards moved to Natchez, Miss. Jackson and Mrs. Robards believed that Robards had obtained a divorce, and were married in Natchez in August, 1791. In December, 1793, they learned that Robards had not been granted a divorce until September of that year. Jackson and his wife were remarried on Jan. 17, 1794, in Nashville.

The Jacksons had no children. In 1809, they adopted the four-day-old nephew of Mrs. Jackson. The boy's mother had been in poor health. With Jackson's permission, his adopted son took the name Andrew Jackson, Jr. (1809-1865). Mrs. Jackson's brother, Samuel Donelson, died in 1805. The Jacksons also reared his two sons, John Donelson and Andrew Jackson Donelson. In 1819, Andrew Jackson Hutchings became a ward of the Jacksons. He was the son of John Hutchings, Mrs. Jackson's nephew.

Business and Politics. In addition to practicing law, Jackson made money by selling land to new settlers. He bought land for as little as 10 cents an acre, and later sold it for as much as \$3 an acre. In 1796, he bought the Hermitage, a plantation about 12 miles

from Nashville. That year he also purchased Hunter's Hill, a plantation 13 miles from Nashville.

Jackson served as a delegate to the state constitutional convention that prepared for Tennessee's admission into the Union. There is a story that Jackson proposed the name "Tennessee" for the new state. He was elected to the U.S. House of Representatives in 1796.

Jackson's rough western frontier manners made him stand out among the representatives of eastern states in Congress. He made only two speeches during his three months in the House. Jackson was 1 of 12 representatives who voted against a resolution praising President George Washington's administration. He criticized Washington's Indian and foreign policies.

Jackson was appointed to the U.S. Senate in 1797. He took a leave of absence in April, 1798. He went home, then resigned from the Senate. Jackson wanted to care for his personal affairs. He also felt that the pace of life in the capital, Philadelphia, was too slow.

Six months later, the Tennessee legislature elected Jackson as a justice of the state supreme court. He held that office for six years. Throughout this period, Jackson managed his two plantations, speculated in land, and ran a general store near Nashville. In 1804, Jackson resigned the judgeship because he wanted to devote full time to his private affairs. He had many debts, and his creditors were demanding payment. Jackson sold his Hunter's Hill plantation and moved to the Hermitage. In 1805, he and John Hutchings established a general store at Clover Bottom, three miles from the Hermitage. Jackson built a stable near the store and bought several race horses. He added to his income with fairly steady winnings on his horses.

Jackson's hair-trigger temper involved him in many duels. But he killed a man in only one. His pistol duel in 1806 with Charles Dickinson, a lawyer, ended in Dickinson's death. Jackson suffered a serious wound. Dickinson had accused Jackson of being a "worthless scoundrel, a poltroon, and a coward." He also had made insulting remarks about Mrs. Jackson.

Jackson the Soldier

The War of 1812 gave Jackson new opportunities. He had been a major general in the Tennessee militia since 1801. When war with Great Britain began, he

IMPORTANT DATES IN JACKSON'S LIFE

- 1767** (March 15) Born in Waxhaw, S.C.
- 1791** (August) Married Mrs. Rachel Donelson Robards.
- 1794** (Jan. 17) Remarried Mrs. Robards.
- 1796** Elected to the U.S. House of Representatives.
- 1797** Elected to the U.S. Senate.
- 1814** Defeated the Creek Indians in the Battle of Horseshoe Bend.
- 1815** Defeated the British in the Battle of New Orleans.
- 1821** Appointed the first governor of Florida.
- 1823** Elected to the United States Senate.
- 1828** Elected President of the United States.
- 1832** Re-elected President.
- 1845** (June 8) Died at the Hermitage in Nashville, Tenn.

quickly offered his services to President James Madison.

For several months, Jackson and his 2,500 Tennessee militiamen awaited orders from the War Department. Finally, in January, 1813, Governor William Blount of Tennessee directed him to reinforce American troops in New Orleans. After Jackson arrived in Natchez, Miss., on the way to New Orleans, he received orders from Secretary of War John Armstrong to demobilize his forces on the spot. Jackson was furious because the federal government had not provided pay, food, transportation, or medicine for his men. He refused to demobilize his army. Instead, he led his men home through the 500 miles of wilderness. "He's tough," one soldier said of Jackson. "Tough as hickory," came the reply. As a result, Jackson returned to Tennessee with his famous nickname, "Old Hickory."

The Battle of Horseshoe Bend. Jackson next took command of a volunteer force of 2,000 men in a campaign against the Creek Indians. The Creek had massacred 250 settlers at Fort Mims in the Mississippi Territory (now Alabama). A serious shortage of supplies and food made military operations difficult for Jackson. He also had to put down two mutinies when some of his men threatened to desert.

The decisive battle of the campaign was fought on March 27, 1814. It took place near the Creek village on Horseshoe Bend of the Tallapoosa River, near present-day Alexander City. Jackson allowed the Indian

women and children to cross the river to safety before he attacked. Then his men nearly wiped out the entire Indian force of 800 braves. "The carnage was dreadful," Jackson wrote later. He dictated peace terms to the Creek, who gave up 23,000,000 acres of land in present-day Georgia and Alabama.

Glory at New Orleans. The federal government, happy to find a man who could win victories, commissioned Jackson a major general in the regular army. The army expected a British attack on New Orleans. Jackson was assigned to command U.S. forces along the southern coast.

Before moving on to New Orleans, Jackson asked permission to seize Pensacola in Spanish Florida. The British had been using the town as a military base. Orders failed to arrive, so Jackson took the responsibility. He captured the town in a quick campaign. The victory left him free to supervise the defense of New Orleans. Jackson arrived in the city on Dec. 1, 1814, and found the people almost defenseless. Though ill with dysentery, he set a furious pace in preparing to defend the city. Among other actions, Jackson proclaimed martial law. He even accepted the help of Jean Laffite and his pirates (see LAFFITE, JEAN). Timely reinforcements from Kentucky and Tennessee increased his forces to about 5,000 men.

After several minor attacks, the British army of more than 8,000 men began its attack at dawn on Jan. 8, 1815. The British marched up in close columns against earthworks defended by Jackson's artillery and riflemen. The attack ended in a terrible defeat for the British, who suffered 700 men killed, 1,400 wounded, and 500 captured. The American losses totaled only 7 men killed and 6 wounded.

The victory made Jackson a national hero. But it had no effect on the War of 1812, because a peace treaty had been signed two weeks earlier. Communications were so slow that Jackson had not learned about the treaty. See WAR OF 1812.

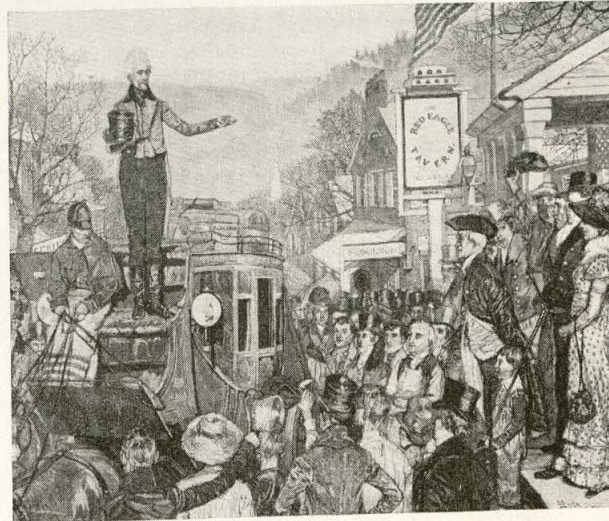
Florida Expedition. Jackson returned to his planta-



Library of Congress

Military Hero. Jackson crushed an uprising by the Creek Indians in Alabama in 1814. He won his greatest military fame the next year by defeating the British in the Battle of New Orleans.

Crowds Greeted Jackson as he traveled to Washington for his inauguration. He made the trip by steamboat and coach.



~Library of Congress

tion in Tennessee, but remained in command of the army's Southern Division. In December, 1817, he received orders to lead an expedition to Florida. Fierce Seminole Indians, some discontented Creek, and groups of escaped slaves and vagabonds had been raiding American settlements north of the Florida-Georgia border. Jackson defeated the Seminole and pursued them into northwest Florida.

Jackson's campaign became an issue in American-Spanish relations. At the time of the campaign, the United States was negotiating for the purchase of Florida from Spain. In 1819, Spain sold Florida for \$5,000,000. Two years later, Jackson became the first governor of the territory. But he did not enjoy this post and served only four months.

Road to the Presidency

Election of 1824. Jackson's military career had ended. From this time on, his battles would be political. He was now 54, and looked forward to the life of a country squire at the Hermitage. But politicians began to talk of electing him President. They remembered him as the hero of the Battle of New Orleans. Jackson's friends and newspapers in Nashville called for his nomination as President. In 1822, the Tennessee legislature nominated him to run for President in 1824. In 1823, the legislature elected him to the U.S. Senate.

Jackson impressed Washington society as a dignified country gentleman. Representative Daniel Webster of Massachusetts commented in 1824 that "General Jackson's manners are more presidential than those of any of the candidates." Yet Jackson faced stiff opposition in the election of 1824. Secretary of State John Quincy Adams regarded himself as the logical man to succeed President James Monroe. Representative Henry Clay of Kentucky hoped to be elected by winning the vote of the West. A congressional caucus nominated Secretary of the Treasury William H. Crawford for President. Each of the four candidates headed segments of the same party, the Democratic-Republican party.

Jackson, the hero of the Battle of New Orleans, proved the popular favorite. He won 99 electoral votes, Adams received 84, and other candidates received 78 votes. But no candidate had a majority, so the election went to the House of Representatives, which voted by states. Clay threw his support to Adams, who won the presidency with the votes of 13 states. Seven states supported Jackson. Five days later, Adams named Clay as his Secretary of State. The enraged Jackson and his supporters charged that the two men had made a "corrupt bargain." Adams denied Jackson's charge, but Jackson never believed him. Nor did Jackson ever forgive Adams or Clay. During the years that followed, Jackson and his supporters did their best to embarrass Adams. They succeeded remarkably. See ADAMS, JOHN QUINCY (Adams' Administration).

Jackson resigned from the Senate in 1825. He felt that his chances for winning the presidency in 1828 would be strengthened if he returned to private life.

Election of 1828. The presidential campaign of 1828 was one of the bitterest in American history. It was also the first in which all nominations were made by state legislatures and mass meetings instead of by congress-

WORLD EVENTS

- 1830 Louis Philippe seized the French throne.
- 1830 Great Colombia was divided into Ecuador, Venezuela, and New Granada (now Colombia).
- 1831 Michael Faraday discovered the principle of electromagnetic induction.
- 1833 Slavery was outlawed in British colonies.

NATIONAL EVENTS

Arkansas became a state in 1836, and Michigan in 1837. Wisconsin was organized as a territory in 1836. U.S. population was 15,900,000 in 1837, the year Jackson retired from the presidency.



The United States flag had 24 stars when Jackson took office.

- 1831 William Lloyd Garrison began publishing his antislavery newspaper, *The Liberator*.
- 1832 Illinois settlers defeated the Sauk and Fox Indians in the Black Hawk War.
- 1832 The Democratic party met in Baltimore for its first national convention.
- 1836 Texas declared its independence from Mexico during the Battle of the Alamo.
- 1836 Samuel Colt began manufacturing the Colt revolver, which became famous as the "six-shooter."
- 1836 Alonzo D. Phillips patented the first phosphorus matches in the United States.

sional caucuses. Adams sought re-election, with Secretary of the Treasury Richard Rush as his vice-presidential candidate. Adams' opponents nominated Jackson for President. As his running mate, they named John C. Calhoun, who had been Vice-President under Adams.

Both Jackson and Adams left the campaigning to friends. Adams' supporters distributed the "Coffin Handbill." This paper criticized Jackson for executing six Tennessee militiamen who had mutinied during the War of 1812. Jackson's remarriage to Mrs. Robards became a campaign issue. He was called a "paramour husband," and she a "convicted adulteress." Jackson's friends repeated the charge of "corrupt bargain" and accused Adams of misusing political patronage.

Jackson won a sweeping victory, with 178 electoral votes to 83 for Adams. He received 647,286 popular votes to 508,064 for Adams. Crowds gathered at the Hermitage to congratulate Jackson. "I am filled with

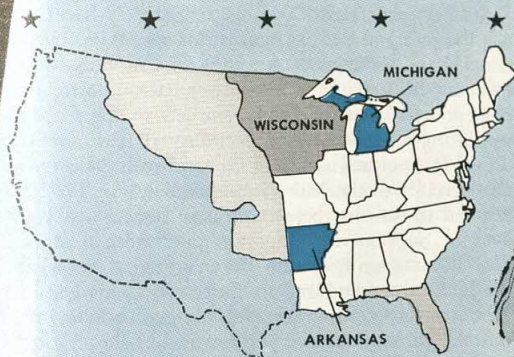
PRESIDENT JACKSON



British Parliament Outlaws Slavery



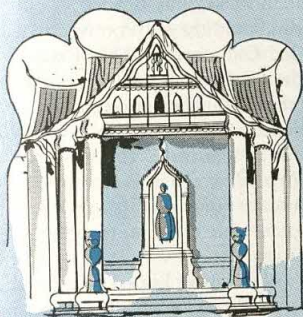
Michael Faraday



The New York Sun was the first successful penny newspaper. Benjamin Day founded it in 1833.



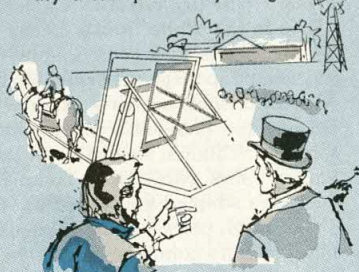
Webster and Hayne held their famous debate on states' rights in 1830. The two Senators clashed over whether a state could nullify a law passed by Congress.



Treaty with Siam in 1833 was the first pact between the United States and a country of Asia.



The Postmaster General became a member of the President's Cabinet in 1829.



Reaping Machine, invented by Cyrus McCormick in 1831, brought sweeping changes to agriculture.

gratitude," he said. "Still, my mind is depressed." This remark referred to the political attacks on his wife.

Mrs. Jackson disliked public life. She preferred the comfort of her own room, with her Bible and a few close friends. On Dec. 22, 1828, she had a heart attack and died that evening. Mrs. Jackson was buried in the garden of the Hermitage. "May God Almighty forgive her murderers as I know she forgave them," Jackson said. "I never can."

Jackson's First Administration (1829-1833)

When Jackson arrived in Washington, D.C., for his inauguration, he was still bitter at the politicians who had attacked his wife. He refused to call on President Adams. Adams did not stay for Jackson's inauguration, and left the White House the day before.

The sun shone brightly on Jackson as he walked bareheaded to the Capitol, followed by a huge crowd.

The tall, lean Jackson stood straight as a soldier at the age of 61. His bright blue eyes shone from a face wrinkled with age and illness. He had suffered tuberculosis and coughed almost all the time. He also had many severe headaches.

"The Federal Constitution must be obeyed, state rights preserved, our national debt must be paid, direct taxes and loans avoided, and the Federal Union preserved," Jackson said in his inaugural address. "These are the objects I have in view, and regardless of all consequences will carry into effect."

Hundreds of cheering admirers—frontiersmen, farmers, women, and children—rushed to shake Jackson's hand. Slowly he made his way down to unpaved Pennsylvania Avenue, mounted his horse, and headed for the White House. Carriages, wagons, and thousands of people on foot followed close behind. The throng swarmed into the White House and eagerly grabbed the

JACKSON, ANDREW

cakes, ice cream, and orange punch that had been prepared for Jackson's reception. The crowd stood on chairs, broke glasses and china, tore clothing and drapes, and even pushed the President aside. Jackson escaped from the mob through a window.

The Spoils System. "The people expect reform," Jackson told Martin Van Buren, who became his Secretary of State. "They shall not be disappointed; but it must be judiciously done, and upon principle." He wanted to destroy what seemed to him a monopoly of federal offices by wealthy men. He also intended to clear out incompetents in these offices.

Jackson introduced the *spoils system* into national politics. Politicians had already perfected this system in New York, Pennsylvania, and other states. The President rewarded his "deserving" supporters by giving them government jobs. Senator William L. Marcy of New York, a friend of Jackson, described the system with the now-famous slogan: "To the victor belong the spoils!" Appointments to jobs were based on loyalty to Jackson. During his eight years as President, he dismissed about 2,000 of the government's 11,000 employees. This was about the same proportion as President Thomas Jefferson had dismissed. But Jefferson removed fewer officeholders for political reasons. See SPOILS SYSTEM.

Jackson also formed the "kitchen cabinet," a group of unofficial advisers who usually met in the rear of the White House (see KITCHEN CABINET).

Life in the White House. Before Mrs. Jackson died, she had expressed the wish that her niece, Emily Donelson, should manage the White House for the President. Mrs. Donelson's husband, Andrew Jackson Donelson, became the President's private secretary. The Donelsons' four children were born in the White House. At various times, Mrs. Sarah Yorke Jackson, the wife of Jackson's adopted son, served as White House hostess.

The north portico of the White House was built during Jackson's administration. The government spent more than \$50,000 to redecorate the mansion.

The President lived well and entertained a great deal. Fancy foods were served, but he usually preferred a simple diet of rice, bread, vegetables, milk, and wine.

JACKSON'S CABINET

Secretary of State	*Martin Van Buren Edward Livingston (1831) Louis McLane (1833) John Forsyth (1834)
Secretary of the Treasury	Samuel D. Ingham Louis McLane (1831) William J. Duane (1833) Levi Woodbury (1834)
Secretary of War	John H. Eaton Lewis Cass (1831)
Attorney General	John M. Berrien *Roger B. Taney (1831) Benjamin F. Butler (1833)
Postmaster General	John McLean William T. Barry (1829) *Amos Kendall (1835)
Secretary of the Navy	John Branch Levi Woodbury (1831) Mahlon Dickerson (1834)

*Has a separate biography in WORLD BOOK.

Jackson kept his race horses in the White House stables. He entered them in races under his secretary's name. He enjoyed horseback riding for recreation, and Van Buren often accompanied him on these rides.

Split with Calhoun. An argument over Margaret O'Neale Eaton caused a split in Jackson's family and in his Cabinet. Mrs. Eaton, the wife of Secretary of War John H. Eaton, was the daughter of an innkeeper. The wives of several Cabinet members, led by Mrs. John Calhoun, refused to accept her into Washington society. In June, 1830, the Donelsons returned to Tennessee for three months. They chose to do this rather than accept Mrs. Eaton in the Executive Mansion. See O'NEALE, MARGARET.

Jackson associated the gossip against Mrs. Eaton with the political attacks against his own wife. He also regarded the affair as an attempt by Calhoun to gain power for himself. A break between the two men developed, and soon involved members of the Cabinet. Supporting Calhoun were Secretary of the Treasury Samuel D. Ingham, Attorney General John M. Berrien, and Secretary of the Navy John Branch. The President hesitated to dismiss these three men because they had powerful support in Congress and from Calhoun.

In 1831, Eaton and Van Buren resigned in order to give Jackson a free hand in reorganizing his Cabinet. The other Cabinet members felt obliged to follow their example. Jackson then appointed anti-Calhoun men as successors to Ingham, Berrien, and Branch.

Another dispute completed the split between Jackson and Calhoun. It ended Calhoun's hopes of succeeding Jackson in the presidency. Early in 1828, Congress had passed a law that increased tariff rates on foreign manufactured goods. Calhoun complained that the law hurt his native state of South Carolina. He secretly wrote *The South Carolina Exposition*. In this document, Calhoun claimed that a state could *nullify*, or reject, any law passed by Congress which the state believed had violated the Constitution.

Men who favored nullification hoped to get Jackson on their side. They invited him to a dinner celebrating Thomas Jefferson's birthday, on April 13, 1830. Jackson stood up to make a toast, raised his glass, looked squarely at Calhoun, and solemnly declared: "Our Federal Union, it must be preserved." The stunned audience stood in silence. Then Calhoun proposed a toast: "The Union, next to our liberty, most dear."

The Bank of the United States. Jackson's fight against the Bank of the United States became the major issue of his first administration. In 1816, Congress had granted the bank a 20-year charter. The bank, although privately owned and managed, had authority over the currency system of the United States. It could stop state banks from issuing too much paper money. It could also prevent them from making loans without enough security. State banks in the South and West were usually freer in extending credit and loans than the more conservative Eastern banks. Western and Southern farmers who could not get new loans or renew old ones denounced the Bank of the United States for restricting the power of local banks.

Jackson disliked the bank for economic as well as political reasons. He thought the law that had created the bank was unconstitutional. He criticized the bank for failing to establish a "uniform and sound" currency.

- 1830 Senators Daniel Webster and Robert Y. Hayne debated states' rights.
- 1832 Jackson vetoed a bill to renew the charter of the Bank of the United States.
- 1832 Settlers drove the Black Hawk Indians from Illinois.
- 1832 South Carolina declared the federal tariff laws null and void. Jackson then sent U.S. troops to the state.
- 1832 John C. Calhoun resigned as Vice-President.
- 1833 Jackson removed government funds from the Bank of the United States.
- 1834 The Senate rejected a Cabinet nominee for the first time—Roger B. Taney as Secretary of the Treasury.
- 1835 U.S. troops forced the Seminole Indians to retreat to the Florida Everglades.
- 1836 Texas declared its independence. Jackson's Specie Circular required payment in gold or silver for public lands.

Jackson favored a "hard money" policy. That is, he believed that currency would be more reliable if paper money was based strictly on *specie*, or gold and silver. Jackson also attacked the bank as a monopoly. He said its vast powers threatened democratic government. The bank had meddled in politics. Also, the bank's political supporters, including Senators Henry Clay and Daniel Webster, opposed Jackson.

In the summer of 1832, Congress passed a bill rechartering the bank. Jackson promptly vetoed the bill. Nicholas Biddle, president of the bank, denounced Jackson's veto statement as a "manifesto of anarchy." On July 13, 1832, Congress upheld the veto. See BANK OF THE UNITED STATES; BIDDLE, NICHOLAS.

Election of 1832 was a milestone in American political history. For the first time, national political conventions chose presidential candidates. Before this time, candidates had been nominated by state legislatures, mass meetings, or congressional caucuses.

The Democratic-Republicans broke into two groups during the campaign for Jackson's re-election. Jackson's opponents took the name *National Republicans*. In December, 1831, the National Republicans met in Baltimore and nominated Henry Clay for President. They chose John Sergeant, head of the legal staff of the Bank of the United States, for Vice-President.

Jackson's supporters continued to call themselves *Republicans* or *Democratic-Republicans*. They also met in Baltimore, in May, 1832. The delegates nominated Jackson for President and Martin Van Buren for Vice-President. Historians trace the origin of the modern Democratic party to the Democratic-Republican party of this period. See DEMOCRATIC PARTY.

The fight to recharter the Bank of the United States became the chief issue of the 1832 presidential campaign. Jackson won an overwhelming victory.

The Nullification Crisis. In 1832, Congress passed another high-tariff act. On November 24, South Carolina declared the tariff laws of 1828 and 1832 null and void. It threatened to *secede*, or leave the Union, if the government tried to collect duties at Charleston.

Jackson and Senator Robert Y. Hayne of South Carolina reacted to the crisis in opposite ways. Hayne resigned from the U.S. Senate and won election as governor of South Carolina. On Dec. 10, 1832, Jackson ordered troops and warships concentrated near Charleston. "The laws of the United States must be executed," he proclaimed. "I have no discretionary power on the subject. . . . Disunion by armed force is treason." In a

counter-proclamation, Hayne vowed to defend his state's sovereignty or die "beneath its ruins." On December 28, Calhoun resigned the vice-presidency and took over Hayne's Senate seat.

Upon Jackson's demand, Congress then passed a force bill. This law authorized him to use the armed forces to collect tariffs (see FORCE BILL). At the same time, Senator Henry Clay pushed through a compromise tariff bill that reduced all tariffs for 10 years. South Carolina withdrew its nullification of the tariff laws, but declared the force law null and void. This step did not settle the nullification issue. The controversy rose again several times in later years. See NULLIFICATION.

Jackson's Second Administration (1833-1837)

Jackson properly interpreted his re-election as public approval of his bank policy. He ordered Secretary of the Treasury Louis McLane to remove the government's deposits from the Bank of the United States and place them in state banks. Both McLane and his successor, William J. Duane, refused to carry out Jackson's order. Duane had been appointed even though Jackson knew that he opposed the President's bank policy. Jackson had thought that he could influence Duane. After Duane refused to act, Jackson named Roger B. Taney to the office. Taney carried out the order. In 1834, however, the Senate rejected Jackson's nomination of Taney. This was the first time a Cabinet nominee had been rejected. See TANEY, ROGER B.

The withdrawal of the government's funds reduced the powers of the national bank. In 1836, it became the Bank of the United States of Pennsylvania.

The Money Surplus. The dispute over the Bank of the United States occurred during a period of heavy speculation in land, the opening of the West, and increased foreign trade. The government was receiving more money from tariffs and the sale of public land than it was spending. On Jan. 8, 1835, Jackson paid off the final installment of the national debt. He was the only President ever to do so. Congress provided that any surplus above \$5,000,000 should be divided among the states in 1837 as a loan. But the panic of 1837 struck before the money could be distributed to all the states. The prospect of more money in circulation had encouraged speculation. Many states spent recklessly on huge public construction programs, such as roads and canals. Hundreds of "wildcat banks" issued their own money (see WILDCAT BANK).

By 1836, most banks had only 1 gold dollar in reserve for every 10 or 12 paper dollars in circulation.

JACKSON'S SECOND ELECTION*

Place of Nominating Convention	Baltimore
Ballot on Which Nominated	1st
National Republican Opponent	Henry Clay
Electoral Vote	219 (Jackson) to 49 (Clay)
Popular Vote	687,502 (Jackson) to 530,189 (Clay)
Age at Inauguration	65

*This was the first election in which national conventions nominated presidential candidates.



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Emily Donelson, Mrs. Jackson's niece, served as hostess of the White House. Her husband was the President's private secretary.



U & U

Rachel Robards Jackson died less than a month before her husband left for Washington, D.C., to be inaugurated President.

As a result, the value of money dropped steadily. Inflation became so serious that Jackson hastened to act before the boom crumbled. On July 11, 1836, he issued his *Specie Circular*. It directed government agents to accept only gold and silver in payment for public lands. This order shocked the West, because speculators there had been buying land with "cheap" paper money. The circular helped end speculation in land. But prices, interest rates, and wages continued to rise. The inflation of money, overexpansion of business, and overinvestment in public improvements brought on a panic that struck shortly before Jackson left office. Jackson's successor, Martin Van Buren, faced a depression about two months after he became President. See VAN BUREN, MARTIN (The Panic of 1837).

The Indian Issue. As a soldier, Jackson had fought Indians. Like his fellow frontiersmen, he resented the fact that Indians in the East owned much of the best farm land. Jackson had long wanted to force these Indians to move west of the Mississippi River.

In 1828, Georgia passed laws that gave the Cherokee Indians no legal protection if the state seized their lands. The Cherokee protested that the federal government had guaranteed them this land by treaty. They claimed that a state could not nullify a federal contract. In this controversy, Jackson did not support the rights of the federal government as he had done in the nullification crisis. Instead, he told the Cherokee that he "had no power to oppose the exercise of sovereignty of any state over all who may be within its limits." Alabama and Mississippi seized the lands of the Choctaw and Chickasaw. The Cherokee then took their own case to the Georgia supreme court. Eventually the case reached the Supreme Court of the United States, which dismissed the Cherokee suit. But in a later case, the court ruled in 1832 that the federal government had exclusive jurisdiction over Indian territory.

By the end of Jackson's administration, almost all Indians in the East—including the Creek, Cherokee,

Choctaw, and Chickasaw—had been moved west of the Mississippi. Thousands of Indians, cheated out of their land, died during the forced migration. The Seminole refused to move. In 1835, they retreated to the Florida Everglades and fought on for seven years until they were almost wiped out.

Foreign Affairs. After the Revolutionary War, Great Britain had prohibited American ships from trading in the West Indies. In 1830, Jackson offered to open American ports to the British if Americans received equal trading rights in the West Indies. Britain accepted the offer.

Jackson achieved another success when he persuaded France to pay its long standing "spoilage," or plundering, claims. French ships had attacked American shipping during the Napoleonic Wars of the early 1800's. In 1831, France agreed to pay for the damages in six annual installments. But France failed to make the first payment in 1833. Jackson then asked Congress to increase military expenditures. France was angered by Jackson's action and recalled its minister. In 1836, Jackson announced that France had paid four back installments with interest. The two nations then resumed diplomatic relations.

Slavery and Texas. During this period, the admission of any state into the Union was linked with the slavery controversy. A new chapter in the dispute developed in 1831 when William Lloyd Garrison began publishing *The Liberator*, an antislavery newspaper (see ABOLITIONIST). In 1835, Texas revolted against Mexico. Americans believed that an independent Texas would soon be annexed to the United States, with its area divided into several states. Such a move would affect the balance between the North and South. This balance had been maintained since the admission of Missouri into the Union in 1821 (see MISSOURI COMPROMISE). Antislavery forces opposed the admission of Texas, or even the recognition of an independent Texas. Jackson had long felt that Texas should be part of



Horace C. Hime

The Hermitage, Jackson's home, stands near Nashville, Tenn. Fire destroyed most of the white-pillared mansion in 1834, and

Jackson rebuilt it the next year. The Hermitage is a national shrine, and thousands of tourists visit the 500-acre estate every year.

the United States. But he did not want to add bitterness to the controversy. On his last day in office, he established diplomatic relations with the Republic of Texas. See TEXAS (History).

Later Years

After seeing his friend Martin Van Buren sworn in as President, Jackson returned to the Hermitage. White-haired and sick with tuberculosis and dropsy, he still stood erect. Jackson rode horseback in the mornings and watched over his cotton fields. In July, 1838, he formally joined the Presbyterian Church. He worshiped in the little brick chapel he had built for Mrs. Jackson many years before. Jackson continued his keen interest in national politics. He supported Van Buren for President in the 1840 election. In 1844, Jackson supported his political protégé, James K. Polk.

On June 8, 1845, Jackson fell unconscious. When he awakened, he saw his weeping slaves crowded about him. "Oh, do not cry," Jackson told them. "Be good children, and we will all meet in heaven." Jackson died that evening. He was buried beside his wife in the garden of the Hermitage.

ARTHUR SCHLESINGER, JR.

Related Articles in WORLD BOOK include:

Adams, John	Indian Wars	Tennessee
Quincy	(In the South)	(pictures)
Bank of the	Kitchen Cabinet	United States,
United States	Nullification	History of
Calhoun, John C.	O'Neale, Margaret	(Jacksonian
Clay, Henry	President of the	Democracy)
Democratic Party	United States	Van Buren,
Force Bill	Spoils System	Martin
		War of 1812

Outline

- I. Early Life
 - A. Boyhood and Education
 - B. The Revolutionary War
 - C. Lawyer
- II. Jackson the Soldier
 - A. The Battle of Horseshoe Bend
 - B. Glory at New Orleans
 - C. Florida Expedition
 - D. Jackson's Family
 - E. Business and Politics

III. Road to the Presidency

A. Election of 1824

B. Election of 1828

IV. Jackson's First Administration (1829-1833)

A. The Spoils System

D. The Bank of the

B. Life in the

United States

White House

E. Election of 1832

C. Split with Calhoun

F. The Nullification Crisis

V. Jackson's Second Administration (1833-1837)

A. The Money Surplus

C. Foreign Affairs

B. The Indian Issue

D. Slavery and Texas

VI. Later Years

Questions

- What was Jackson's nickname? How did he get it?
- How did the Revolutionary War bring personal tragedy to Jackson?
- How did Jackson meet the nullification crisis?
- Why did Jackson not become President in 1824, even though he received the most electoral votes?
- What statement of principles did Jackson announce at his first inauguration?
- What were two major achievements of Jackson in foreign affairs?
- What was Jackson's slogan?
- Why did Jackson and Vice-President John Calhoun become political enemies?
- How did Jackson's attitude toward the Cherokee Indians in the 1830's differ from his earlier stand in the nullification crisis?
- What use did Jackson make of the Spoils System?

Books to Read

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JACKSON, CHEVALIER



Chicago Historical Society

Helen Hunt Jackson

JACKSON, CHEVALIER. See SURGERY (History).

JACKSON, HELEN HUNT (1830-1885), became best known for her efforts to secure justice for the American Indians. In *A Century of Dishonor* (1881), she documented the history of the United States government's mismanagement of Indian affairs. She presented a copy of the book to every member of Congress. She was then appointed special commissioner to investigate Indian affairs.

In her novel *Ramona* (1884), Mrs. Jackson dramatized the mistreatment of the Indians. *Ramona* was made into a successful motion picture in 1928. Mrs. Jackson also wrote children's stories and poems.

Born at Amherst, Mass., she corresponded with and encouraged poet Emily Dickinson. ELEANOR M. TILTON

JACKSON, ROBERT HOUGHWOUT (1892-1954), an American lawyer and judge, served as an associate justice of the Supreme Court of the United States from 1941 until his death. He was one of the most brilliant of the group of lawyers brought into public service by President Franklin D. Roosevelt during the early days of the New Deal (see NEW DEAL). He served as Solicitor General in 1938 and 1939, and defended New Deal laws in Supreme Court hearings. In 1940 and 1941, he was Attorney General. As a Supreme Court justice, Jackson showed independence, and argued that judges should try to keep their judgments free from personal opinion. During 1945 and 1946, he was chief U.S. prosecutor at the war crimes trials in Nuremberg, Germany. He was born at Spring Creek, Pa. MERLO J. PUSEY

JACKSON, "STONEWALL," THOMAS JONATHAN (1824-1863), was one of the most famous Confederate generals and one of the best officers who fought under General Robert E. Lee. At the first battle of Bull Run, or Manassas, Jackson's brigade faced overwhelming odds, but formed a strong line and held its ground. General Barnard E. Bee, trying to rally his Southern troops, saw Jackson's line and shouted, "There is Jackson standing like a stone wall. Let us determine to die here, and we will conquer." From that moment, Jackson was known as "Stonewall," and his brigade was called the *Stonewall Brigade*.

Jackson's chief characteristics were his religious nature, his careful attention to military detail, his firm discipline, and his capacity to get the maximum efforts from his men. His soldiers loved him with a peculiar intensity, and they trusted his ability. As one observer said, Jackson's men would "meet death for his sake, and bless him when dying." Lee and Jackson understood each other so perfectly and worked so well together, that General Lee could not find a man capable of replacing Jackson after his death.



Chicago Historical Society

"Stonewall" Jackson

Early Career. Jackson was born at Clarksburg, Va. (now West Virginia), on Jan. 21, 1824. Orphaned at an early age, he received sketchy schooling in country schools. But he worked hard and secured an appointment to the United States Military Academy in 1842. His career there represented a triumph of sheer will power. Because of his inadequate schooling, he had to work several times harder than most cadets to absorb lessons. But his grades slowly climbed until he was graduated in the upper third of his class. The story went

General "Stonewall" Jackson Led Prayers in His Confederate Camp During the Civil War.

Culver



around the school that if Jackson had had one more year, he would have ranked first.

As soon as he received his commission as a lieutenant of artillery, Jackson was assigned to the war zone in Mexico. There he first met Robert E. Lee. Jackson served gallantly at Veracruz, Contreras, and Chapultepec, and rose to the temporary rank of major in less than a year.

After the Mexican War ended, Jackson served at various forts. In 1850 his company went to Florida to fight the Seminole Indians. Jackson left the army in 1851 and joined the faculty of the Virginia Military Institute at Lexington, where he taught from 1851 until 1861. He was not popular as a teacher, and the students mocked his apparently stern, religious nature. His shyness worked against him, with the result that only a few cadets ever appreciated his goodness and ability.

Although he favored preservation of the Union, Jackson went with his state, Virginia, when it seceded. An unknown when the war started, he soon made a reputation. In the Shenandoah Valley in 1862, Jackson earned international fame. With not more than 17,000 men, he defeated 60,000 Union troops in a series of lightning marches and brilliant battles. After the campaign ended in June, Jackson raced to the aid of Lee at Richmond. He fought in the Seven Days' Battles, and at Cedar Mountain, the second battle of Bull Run, Antietam (Sharpsburg), and Fredericksburg.

Tragic Death. Jackson fought his greatest battle in May, 1863. He took his Second Corps around General Joseph Hooker's Union forces near Chancellorsville, Va. Jackson's men struck from behind and drove the enemy back in wild disorder. At nightfall, Jackson went ahead of the line to scout. In the darkness, some of his own men mistook him for the enemy and shot him. He died eight days later. Although the Confederate Army won the battle in which Jackson fell, his death more than offset the victory over the Union forces. Lee said he lost his right arm when Jackson died. Jackson was buried at Lexington, Va. In 1955, he was elected to the Hall of Fame.

FRANK E. VANDIVER

See also CIVIL WAR; WEST VIRGINIA (Interesting Places to Visit [Jackson's Mill]).

JACKSON HOLE. See GRAND TETON NATIONAL PARK.

JACKSON PURCHASE REGION. See KENTUCKY (Land Regions).

JACKSON STATE COLLEGE is a state-controlled school in Jackson, Miss. It has divisions of teacher training and liberal arts, and a graduate program for principals and supervisors in education. Courses lead to A.B., B.S., and B.S. in Ed. degrees. The college was founded in 1877. For enrollment, see UNIVERSITIES AND COLLEGES (table).

JACKSONIAN DEMOCRACY. See JACKSON, ANDREW; UNITED STATES, HISTORY OF (Jacksonian Democracy).

JACKSONVILLE, Fla. (pop. 201,030; alt. 20 ft.), is the industrial capital and third largest city of Florida. It lies on both banks of the Saint Johns River, about 20 miles west of the Atlantic Ocean. For location, see FLORIDA (color map).

Jacksonville has about 500 factories. They produce large amounts of canned goods, chemical products, cigars, fertilizers, lumber, naval stores, and pulp and



Fairchild Aerial Surveys, Inc.

Jacksonville, Fla., lines both banks of the Saint Johns River. Fishing wharves and piers stretch along the water front.

paper. Shipbuilding is another important industry. Jacksonville serves as a distributing center for many products. Several large insurance companies have their southern regional headquarters in Jacksonville.

Five railroad trunk lines enter the city. Jacksonville has a 34-foot channel to the ocean at low tide, and is a shipping center. It has a large airport.

The Spanish built Fort Niclaus on the south shore of the Saint Johns River in 1740. The fort was burned in 1812 by a group trying to win independence from Spain. The town of Jacksonville was laid out in 1822 on King's Road, which the British had built between Florida and Georgia. It received the name *Jacksonville* in honor of Andrew Jackson, the first military governor of the Territory of Florida. Jacksonville became a city in 1832. The Seminole War and the Civil War halted development of the city. During the Civil War, Union Army troops occupied Jacksonville. A fire destroyed the business section in 1901, but it was quickly rebuilt.

In 1940, a United States Naval Air Station was commissioned on the Saint Johns near the city.

Jacksonville serves as the seat of Duval County. It has a combined commission and mayor-council form of government.

KATHRYN ABBEY HANNA

JACKSONVILLE, Ill. (pop. 21,690; alt. 600 ft.), has more colleges and state institutions per capita than any other Illinois city. It is the home of Illinois College, MacMurray College, the Illinois School for the Deaf, the Illinois School for the Blind, and the Jacksonville State Hospital for mental patients. Jacksonville is the county seat of Morgan County. It has a mayor-council government. The city lies in west-central Illinois, and is an important trading center. For location, see ILLINOIS (color map).

PAUL M. ANGLE

JACKSONVILLE STATE COLLEGE

JACKSONVILLE STATE COLLEGE is a state-controlled coeducational school at Jacksonville, Ala. Courses in liberal arts and education lead to B.A., B.S., and M.S. in Ed. degrees. The college was founded in 1883. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

JACKSTONES. See **JACKS**.

JACOB, *JAY kub*, was the son of Isaac, and the father of the 12 sons who founded the Twelve Tribes of Israel, according to the Old Testament. He bought his older brother Esau's birthright with a bowl of savory stew ("mess of pottage"). Later, Jacob enforced his claim by pretending to his blind and aged father that he was Esau himself. Thus, he obtained from Isaac the words of blessing Isaac had meant for Esau. Esau was so angry that Jacob fled for his life.

On the way to his uncle Laban, Jacob slept at a place called Bethel, where he dreamed of a wonderful ladder between heaven and earth. In the dream, God promised to protect and bless him while he was away from home. Much encouraged, Jacob went on to Laban's home. There he fell in love with Laban's daughter, Rachel. But Laban forced Jacob to marry his older daughter, Leah, before he could have Rachel for his wife. After working 21 years for Laban, Jacob left for home with large flocks and herds.

On the way home, Jacob prayed all night until God gave him reassurance that Esau would spare his life. The next day Esau met him with forgiveness, and they parted good friends. Jacob then lived in Canaan. He spent his last years in Egypt, where his son Joseph brought him to live.

GLEASON L. ARCHER, JR.

See also **ESAU**; **ISAAC**; **JOSEPH**; **RACHEL**.

JACOBAN FURNITURE. See **FURNITURE** (English).

JACOBIN, *JACK oh bin*, was a member of the most famous political society in France during the French Revolution, the *Jacobin Club*. The society got its name from the fact that it met in a hall which had belonged to the Convent of St. James (*Jacques* in French), in Paris. After the royal court and the National Assembly were removed to Paris, the Jacobins rapidly grew in power and importance. They finally became the ruling power of the Revolution. The Jacobins dominated the Commune of Paris, which organized the mob demonstrations against the king. Their most influential member, Robespierre, practically ruled France during the Reign of Terror. When the French Convention turned against Robespierre and ordered his execution on the guillotine in 1794, the power of the Jacobins was broken. The club was closed in 1799.

The name *Jacobin* is still applied in France to a person who supports any type of radical measure in legislation.

J. SALWYN SCHAPIRO

See also **FRENCH REVOLUTION**; **GIRONDIST**; **MIRABEAU**, **COMTE DE**; **ROBESPIERRE**; **SEYÈS**, **EMMANUEL JOSEPH**.

JACOBITE. See **SCOTLAND** (Union with England).

JACOBS, HELEN HULL. See **TENNIS** (Famous Tennis Players).

JACOBS, JOSEPH (1854-1916), was known as a collector and reteller of fairy tales. He was also a learned Jewish historian and anthropologist. His works include collections of English, Celtic, and Indian fairy tales; *Studies in Biblical Archaeology* (1894); and *An Inquiry into*

the Sources of the History of the Jews in Spain (1894).

Jacobs was born in Sydney, Australia, and was graduated from St. Johns College, Cambridge, England. His interest in Jewish history took him to Berlin for further studies, and to New York City where he edited the *Jewish Encyclopedia*. His retellings of folk tales grew out of his interest in anthropology, and his first collection of stories, *English Fairy Tales*, was published in 1890.

JEAN THOMSON

JACQUARD, *ja KAHRD*, is the name of an elaborate weave found in table damask, bedspreads, and brocades. Its name comes from the Jacquard loom, on which flower designs or even pictures of men and women can be woven. The name Jacquard is also used for a type of knitting that requires a machine like the Jacquard loom to make changes in color and design.

See also **JACQUARD**, **JOSEPH MARIE**.

GRACE G. DENNY

JACQUARD, *juh KAHRD*, or *ZHAH KHAR*, **JOSEPH MARIE** (1752-1834), perfected the automatic pattern loom. Jacquard looms, which resulted from the ideas of many, could make intricate patterns as easily as older looms made plain cloth (see **JACQUARD**).

Jacquard was born in Lyons, France, the son of a weaver. In 1800 he saw an English journal that offered a prize for a simple pattern loom. He resolved to invent one for France. His first try won a medal at an industrial exhibition in 1801, and he was taken to the Paris Conservatoire des Arts et Métiers to improve it. He saw looms that suggested changes in his design, and by 1804 he had perfected a loom action which has remained essentially the same.

Fearing unemployment, silk workers violently opposed use of the new invention. But the French government made the design public property, and it was widely adopted. Its use lowered prices of silk and increased the market, resulting in more employment. The government gave Jacquard a pension.

ROBERT E. SCHOFIELD

JACQUERIE, *ZHAK REE*, was a revolt of French peasants which took place in 1358, during the period of the Hundred Years' War. The peasants rebelled against the rule of the nobles. The word *Jacquerie* comes from *Jacques Bonhomme* (Jack Goodfellow), which was a scornful name French noblemen gave to French peasants.

JADE is a hard, tough, and highly colored stone widely used for fine carvings and jewelry. During the days of ancient Chinese civilization, it took the place of gold and other precious stones. The Chinese carved it into jewelry, and also buried it with their dead. Many beautiful jade carvings, dating from 1400 B.C., have been dug from the ruins of An-Yang, the capital of the first Chinese dynasty. Through the years, the Chinese developed new sources of the mineral and improved their carving technique. Jade carving reached its height during the Ming Period (1368-1644). The carvings of this period are treasured by collectors.

Two minerals, jadeite and nephrite, are classified as jade. Their chief colors are white and green, although many other colors are found.

Nephrite, the chief source of jade, was the mineral which the early Chinese used for carving. At that time, it came from Turkestan. Today, it comes chiefly from New Zealand. Nephrite deposits also have been found in Wyoming and Alaska. The principal jade-cutting centers are at Peking, Shanghai, and Canton. The mineral is translucent to opaque, and comes in a wide range

CHINESE JADE

Stanley Charles Nott



A Kneeling Buffalo of About 100 B.C. once adorned an altar dedicated to earth in lower Szechwan, China.



The Famous Buddhist Elephant of About A.D. 100 is one of the earliest Chinese Buddhist figures in jade.

Chicago Nat. Hist. Mus.; Stanley Charles Nott



This Blue Jade Censer from China was used to burn sweet-smelling incense.



A Chinese Lady carved in white jade



This Chinese Teapot is one of the oldest jade teapots in the Western world.

Art Institute of Chicago; Chicago Nat. Hist. Mus.; Stanley Charles Nott



Jade Bowl and Cover by a Chinese artist of the 18th century



Beautifully Carved Jade Plaque, worn as an ornament in China



Green Altar Screen of the Shun-Chih jade period (about A.D. 1650)

JAEGER

of colors, including dark green, white, yellow, gray, red, and black. The most valuable type of nephrite is a dark green jade called *spinach jade* or *Chinese jade*.

Jadeite is a rare jade mineral, found chiefly in Burma, in Japan, and in carved objects in Mexico. It also occurs in California. It is more valuable than nephrite because of its beautiful colors, such as light green or lilac. Once in a while, small amounts of a transparent emerald-green colored jadeite are found in boulders. The best quality of this jade is very valuable. It is superior to some really old Chinese pieces.

Jade minerals have a peculiar structure of interlocking meshes of fine needles that make them very strong and suitable for carving into delicate patterns and thin implements. This quality made jade popular among primitive peoples. Nephrite tools were found in the Lake Dweller remains of the New Stone Age in Europe and Central America.

FREDERICK H. POUGH

See also GEM.

JAEGER, YAY gur, or **JAY gur**, is a gull that lives in northern regions of the world. It is also called the *hunting gull*, and is a small relative of the skua (see SKUA). Jaegers have brown or blackish feathers and hooked beaks. In winter they travel south over the oceans.

Scientific Classification. Jaegers belong to the family *Stercorariidae*. One common jaeger is genus *Stercorarius*, species *pomarinus*.

ALEXANDER WETMORE

JAFFA, JAF uh, Israel, is one of the oldest cities in the world. Ancient Egyptian records confirm the existence of the city. It has been an important seaport since Biblical times, when it was called *Joppa*. The Arab population of Jaffa fled during the Arab-Israel war in the 1940's. Jaffa now forms part of the municipal area of Tel Aviv on the shores of the Mediterranean Sea (see TEL AVIV).

ALEXANDER MELAMID

JAGANNATHA. See JUGGERNAUT.

JAGELLON DYNASTY. See POLAND (Union with Lithuania).

JAGGERY. See PALM.

JAGUAR, JAG wahr, is one of the largest of the great cats found in the Americas. Most jaguars now range from Central America south to Argentina, in South America. There are still some in Mexico. In pioneer days

jaguars were found living as far north as Arkansas.

This fierce cat is 6 to 7 feet long from the end of its nose to the tip of its tail, and weighs up to 250 pounds. Its coat is usually deep yellow, marked with many black spots. Some of the spots look like broken rings. Some jaguars in the South American forests are almost coal black. Jaguars live in woods or on plains.

The jaguar kills and eats game birds, deer, pigs, tapirs, capybaras, and smaller animals. It attacks horses and cattle. It is usually afraid of human beings, but may attack an unprotected man. It seldom strikes in the open, but jumps upon its prey from a hiding place.

Many people who live in countries where there are jaguars call them "tigers." The jaguar is next to the lion and tiger in strength and size among the great cats. Its roar is loud and deep, and is one of the most frightening things about the animal.

Scientific Classification. The jaguar is in the family *Felidae*. It is genus *Felis*, species *onca*.

HAROLD E. ANTHONY

See also ANIMAL (color picture, Central and South America).

JAHAN, SHAH. See SHAH JAHAN.

JAHN, yahn, FRIEDRICH LUDWIG (1778-1852), a German teacher, invented gymnastics and became the father of the gymnastics movement in Germany. His followers organized clubs known as *Turnvereins*, which were popular from about 1840 until 1914 (see TURNVEREIN). They held many large festivals and contests, including a national *Turnfeste*.

Jahn was a teacher in Berlin in 1810 when he began to take his pupils to an open field to exercise and play games. He built crude devices that became models for equipment now used throughout the world. His books were used as guides for physical-education programs, and he lectured extensively on the subject. His liberal political views caused his arrest in 1819, but by 1840 Jahn was considered a national hero. He was born at Lanz.

GALEN SAYLOR

JAI ALAI, HIGH uh LIE, is a game played with a hard ball about the size of a baseball, called a *pelota*, and a basketlike container called a *cesta*. The upper part of the cesta is strapped to the player's arm. On the other end of the cesta is the curved container for catching the ball and throwing it forward again. The game is played on a court, or *cancha*, with high walls on three sides.

Florida Development Commission



Jai Alai, often called the fastest game in the world, requires much physical energy and strength. The ancient Spanish sport, played with a basketlike cesta, has become highly popular in Florida and Cuba.

The spectators sit behind a protecting screen on the fourth side. The American jai alai court is 176 feet long, 55 feet wide, and 40 feet high.

The game may be played singles, doubles (two to a team), or triples (three to a team). The server hits the ball against the wall by hurling it from his cesta. His opponent must catch it either before it hits the hard floor, or on the first bounce. The opponent then also hurls the ball against the wall, and the server must hit it back. If the opponent misses his catch, the server gets a point. If the server misses, the serve goes to the opponent. Six points is usually a singles game. In doubles and triples the game point may be 30.

Jai alai closely resembles handball, except for the cesta. The game is fast and dangerous. The ball often travels 150 miles an hour and is harder than a golf ball. It can kill or severely injure a player. The words *jai alai* are of Basque origin, and mean *merry festival*.

In the United States, jai alai is played mostly in Florida. The game is a favorite in Cuba, Mexico, and Spain. The game is called *pelota* in Spain. In jai alai, as in horse racing, betting is an important part of the sport.

EDWIN POPE

JAIL. See PRISON.

JAINISM, JINE *iz'm*, is one of the religions of India. Mahavira founded it in the 500's B.C. as an outgrowth of Hinduism. Mahavira and 23 leaders who came before him were called *Jains*, or conquerors. Jainism stresses the doctrine of *ahimsa*, or nonviolence to all living creatures. It emphasizes stern asceticism in order to conquer the appetites of the body. Jains, like Hindus, believe in transmigration of the soul (see TRANSMIGRATION OF THE SOUL). About 1,000,000 persons practice Jainism today. See also HINDUS.

GEORGE NOEL MAYHEW

JAIPUR, jy POOR, or **JEYPORE, ji PORE** (pop. 291,130), is the capital of the state of Rajasthan, India. For location, see INDIA (color map). Jaipur differs from most Indian cities because its streets are straight and wide, and are laid out in city blocks. Most of the buildings in Jaipur are made of rose-colored stone or stucco. The huge palace of a maharajah stands in the center of the city. Jaipur is a trading center for home-manufactured muslin, carpets, pottery, and brassware.

ROBERT I. CRANE

JAKARTA. See DJAKARTA.

JALAP, JAL *up*, is a twining vine related to the morning-glory. It gets its name because it grows chiefly in the area of the Mexican town, Jalapa, which is about 4,800 feet above sea level. The root produces a laxative drug. The turnip-shaped jalap grows from 1 to 4 inches long. It is cultivated commercially in India and Jamaica.

Scientific Classification. The jalap belongs to the family *Convolvulaceae*. It is genus *Exogonium*, species *purga*.

HAROLD NORMAN MOLDENKE

JALISCO, hah LEES koh (pop. 1,746,777), has the second largest population of any Mexican state. Jalisco lies along the Pacific Coast. For location, see MEXICO (color map). It has an area of 31,152 square miles. The Sierra Madre Occidental mountains rise across western Jalisco. Farmers raise several kinds of fruits and vegetables. Jalisco also has a lumber industry. Guadalajara, the capital, is the second largest city of Mexico. See also GUADALAJARA.

CHARLES C. CUMBERLAND

JALOUSIE WINDOW. See WINDOW.

JAM. See JELLY AND JAM.

JAMAICA, juh MAT kuh, is the largest island in the West Indies Federation. High mountains, soft breezes, and colorful flowers make it a tropical paradise. The island has many lovely waterfalls, streams, and springs. The name *Jamaica* comes from an Indian word, *Xay-maca*, which means *island of springs*. This great natural beauty draws thousands of tourists to Jamaica every year. But the island does not depend entirely on tourists for income. It produces a variety of farm crops, and its huge bauxite deposits make it one of the leading bauxite-mining areas in the world. Kingston is the capital and largest city.

Location, Size, and Surface Features. Jamaica forms a part of the West Indian group of islands known as the Greater Antilles (see ANTILLES). It lies in the Carib-



The Island of Jamaica Lies South of Cuba.

bean Sea, about 90 miles south of Cuba. Jamaica includes the Cayman, Turks, and Caicos islands, and Morant and Pedro cays as dependencies. The island and its dependencies cover 4,706 square miles. Jamaica itself has an area of 4,411 square miles, which is just a little smaller than the state of Connecticut.

Jamaica is about 148 miles long, and 52 miles wide at its widest point. It resembles a turtle in shape, with east-west mountain ridges forming the turtle's back. These mountains rise in the east to the cloud-capped Blue Mountains. Jamaica's highest point, Blue Mountain Peak, reaches an elevation of 7,520 feet above sea level. Lowlands stretch across the western end of the island, and a narrow strip of flat land covers the southern coast. Many excellent bays and harbors cut into the coast. Short rivers flow north and south from the central mountain ridge to the sea.

Climate and Natural Resources. Ocean breezes and trade winds cool Jamaica for most of the year, giving the island a delightful climate. Temperatures along the coast average between 80° and 85°F. the year around. Mountain areas have somewhat cooler weather, with average temperatures between 40°F. and 45°F. Rain falls the year around, but May and October are the wettest months. Annual rainfall averages 77 inches.

Jamaica's chief natural resources are its fertile soil and its rich bauxite (aluminum ore) deposits. All types of tropical crops grow well in the island's rich soil. The bauxite deposits, which are the richest-known in the world, lie in the central part of the island. Jamaica also has deposits of gypsum, lead, and salt.



Black Star

Kingston, Jamaica, lies at the northern end of an excellent landlocked harbor on the southeast coast of the island. The picturesque Blue Mountains rise to a height of 7,000 feet behind the city.

The People. Jamaica has a population of 1,541,700. Nearly 95 of every 100 persons are of Negro or mixed Negro and white ancestry. About 15,000 whites live on the island, 22,000 East Indians, and 7,000 Chinese. Most Jamaicans live in rural areas. The Negroes work primarily as farm laborers. The business and professional classes consist mainly of people of mixed Negro and white descent, and of Chinese. The largest religious groups on the island include Baptists, members of the Church of England, Methodists, Presbyterians, Roman Catholics, and Seventh Day Adventists.

Kingston, the capital and chief port, lies on the southeastern coast of the island. It has a population of 109,056. Spanish Town (pop. 12,007), which lies 11 miles west of Kingston, served as the island capital until 1872. Montego Bay (pop. 11,547), on the northwestern coast, acts mainly as a tourist center.

Work of the People. Most Jamaicans earn their living by farm labor. The chief agricultural products are bananas, cacao, citrus fruits, coconuts, coffee, sugar cane, tobacco, and tropical fruits. The island ranks eighth among the countries of the world in the quantity of bananas it exports. Other important farm products include allspice, arrowroot, ginger, and pimientos.

Expansion of bauxite-mining activities has broadened the scope of Jamaican industry. The island ranks third among the countries of the world in bauxite production. The largest mines operate near Mandeville, Ocho Rios, and Williamsfield. Nearby processing plants reduce the bauxite to alumina, a prime source of metallic aluminum (see ALUMINA).

Jamaica has a number of important manufacturing

industries. About 20 sugar factories operate on the island, and they produce over 350,000 tons of sugar a year. Distilleries turn out over 2,000,000 gallons of rum a year. Other important manufactured items include cigars, cigarettes, cocoa products, matches, paint, and shoes.

The tourist industry expanded rapidly in Jamaica after World War II. Large resort hotels were built in many areas, especially during the 1950's. Popular resort areas include Kingston, Mandeville, Montego Bay, and Ocho Rios. Tourists from the United States, Canada, and Europe spend about \$23,000,000 a year in Jamaica.

Education. Jamaica operates about 700 public elementary schools, and several industrial and vocational schools and training colleges. Over 230,000 students attend the elementary schools. But many Jamaicans still cannot read or write. The University College of the West Indies, which is affiliated with London University, was chartered in 1949.

Government. Jamaica is one of the 10 islands that form the West Indies Federation (see WEST INDIES FEDERATION). The island elects 17 of the 45 members in the Federation's House of Representatives. It also sends 2 of the 19 senators appointed by the governor-general of the Federation. A governor serves as the chief executive of Jamaica's local government. The British Crown appoints him to office. Aside from the governor, the island possesses complete self-government. The people elect the 32 members of Jamaica's House of Representatives, and all but 1 of the 14 members of the Legislative Council (or upper house). The governor has the right to select the fourteenth

Black Star



Tourists in Jamaica enjoy the sunny outdoor markets where merchants display their hand-woven and home-made articles. Their wares include "jipijapa" hats, grass and raffia bags, straw baskets, and hand-painted skirts.

member of the island's Legislative Council.

History. Christopher Columbus discovered Jamaica in 1494. Arawak Indians lived on the island at that time, but they eventually died off or were killed by the Spanish. The Spaniards did not try to settle or develop the island. The English invaded Jamaica in 1655, and completed their conquest by 1660. They received legal possession of the island by the Treaty of Madrid in 1670.

During the 1670's, Jamaica served as the refuge of the pirates and buccaneers who launched savage attacks against ports and shipping on the Spanish Main (see SPANISH MAIN). The pirates maintained their headquarters at Port Royal. The English officially opposed these raiders, but did little to stop their activities. Sir Henry Morgan, one of the buccaneer leaders, served as lieutenant governor of Jamaica from 1674 to 1683.

Jamaica reached the height of its prosperity in the mid-1700's. It produced vast amounts of sugar, and served as the chief slave market in the Western Hemisphere, after the establishment of the Royal African Company in 1672. The island lost a large part of its market during the Revolutionary War in the United States. It revived briefly during the Napoleonic wars, but its fortunes again decayed after the peace was signed. The British freed slaves on the island in 1834.

The freeing of the slaves left Jamaican plantations short of labor, especially after schemes for using East Indian coolies failed. Jamaica declined even further after the British abolished their tariff preference to colonial sugar. Most of the other colonies recovered from this blow, but Jamaica lagged behind. The island suffered a serious cholera epidemic in 1850 and 1851.

In the late 1800's, all islands in the British West Indies suffered from the competition of European beet sugar. Jamaica felt this competition less than some of the islands, because its banana crops made it less dependent on sugar. World War I brought prosperity for a few years. But World War II proved less helpful, because of the difficulty of exporting crops and importing supplies. The United States provided some of the people with jobs after 1940, when the Americans leased Portland Bight from Britain as a naval and air base.

A great number of people emigrated to Great Britain after World War II, primarily because of the poverty and political unrest in Jamaica. The island became one of the original 10 members of the West Indies Federation when that country was established in 1958. A certain number of people on the island felt that Jamaica's interests would be sacrificed to those of the smaller units of the Federation, and openly opposed joining the Federation. Once within the Federation, these people criticized the federation's policies, hoping to dissolve their union with the other islands or to retain control of their own economic affairs.

W. L. BURN

Related Articles in WORLD BOOK include:

Alumina	Bauxite	Spanish Main
Antilles	British West Indies	West Indies
Banana	Kingston	Federation

JAMAICA BAY. See NEW YORK CITY (Interesting Places to Visit).

JAMAICA PEPPER. See ALLSPICE.

JAMBOREE. See BOY SCOUTS (Jamborees).

JAMES was the name of two kings of England and Scotland, and of five kings of Scotland. All belonged to the House of Stuart.

JAMES

James I (1566-1625) was the son of Mary, Queen of Scots, and Lord Darnley. When his mother abdicated in 1567, he became King James VI of Scotland. When his cousin Queen Elizabeth I of England died in 1603, he became king of England.

James was impractical and impolitic. King Henry



Brown Bros.

James I first united the thrones of England and Scotland.



Brown Bros.

James II lost the throne of England and Scotland in 1688.

IV of France is said to have called him "the wisest fool in Christendom." James believed strongly in his own divine right to rule and quarreled with Parliament. He was intolerant of Protestant dissenters.

The first permanent English colony in America was established in Virginia in 1607. It was named Jamestown in honor of James I. The Puritans, Protestant dissenters, migrated to New England later in his reign. A major achievement of James' reign was the translation of the Bible by a commission of churchmen, published in 1611. It has become known as the *King James Version*.

James married Princess Anne of Denmark in 1589. Their daughter Elizabeth married the German elector of the Palatinate, and one of their great-grandsons became King George I of England in 1715. James was succeeded by his son, Charles I.

James II (1633-1701) was a younger son of King Charles I. As Duke of York, he had a distinguished career as admiral and head of the navy. In 1664, New Amsterdam, captured from the Dutch, was renamed New York in his honor.

James succeeded his brother Charles II as king in 1685. He tried immediately to carry out two major aims—to rule without Parliament and to make England Roman Catholic. But his efforts aroused such opposition that he was forced to flee the country. In the "Glorious Revolution" of 1688, Mary, his Protestant daughter, and her husband, William of Orange, were proclaimed joint rulers in his place. James spent the rest of his life in exile.

Five Stuart kings named James ruled Scotland from 1424 to 1542. They included James I (1394-1437), who ruled from 1424 to 1437; James II (1430-1460), who ruled from 1437 to 1460; James III (1451-1488), who ruled from 1460 to 1488; James IV (1473-1513), who ruled from 1488 to 1513; and James V (1512-1542), who ruled from 1513 to 1542.

W. M. SOUTHGATE

Related Articles in WORLD BOOK include:

Bible	Mary, Queen of Scots
Divine Right of Kings	Monmouth, Duke of
Mary (II) of England	Stuart, House of

JAMES

JAMES is the name of two, and possibly three, persons in the New Testament.

Saint James the Greater was the brother of John and the son of Zebedee. He was in the first company of those who were called to be disciples (Matt. 4: 21, 22), and later became one of the 12 apostles. Like John, James was ardent and ambitious. He was a close companion of Jesus. He witnessed the Transfiguration and shared, with Peter and John, Jesus' prayer in Gethsemane. James was among the disciples Jesus met by the Sea of Galilee after the resurrection. He became the first apostle to be martyred, when Herod Agrippa I had him killed about A.D. 44. Tradition says he preached in Spain before his death. His feast day is celebrated on July 25 except in the Eastern Orthodox Churches, which celebrate it on April 30.

Saint James the Less is often considered to be the son of Alphaeus and is listed as one of the 12 apostles in Matthew 10: 3. In other parts of the Bible, he has been identified with James, "the brother of the Lord," and James, the son of Mary, who was the wife of Cleophas. Bible authorities interpret these passages differently. The Roman Catholic Church considers James the Less and James, the son of Alphaeus, as the same person. The Eastern Orthodox Churches see them as separate persons. Saint James the Less is generally honored on the feast of Saints Philip and James on May 1. But the Eastern Orthodox Churches celebrate his feast day on October 9.

FULTON J. SHEEN and MERRILL C. TENNEY

See also JAMES, SAINT.

JAMES, HENRY (1843-1916), one of the greatest American novelists, also wrote many fine short stories and *nouvelles*, or short novels. He wrote many of his novels and stories from the point of view of one or more of the main characters. Little is allowed to enter the story which these characters do not experience.

As an American who chose to live in Europe, James often wrote about the conflicts, both amusing and serious, between American and European manners and customs. *The American* (1877), *Daisy Miller* (1879), and one of his best novels, *The Portrait of a Lady* (1881), use this theme. His best-known novels set in America are *Washington Square* (1881) and *The Bostonians* (1886). One of his most widely read books is the psychological horror tale, *The Turn of the Screw* (1898).

Early Career. James was born in New York City. His father had enough money to travel in search of

Henry James

Brown Bros.



an education for his five children. Henry and his brother William, who became a famous psychologist and philosopher, both profited immensely from their experiences in Europe during childhood and youth.

In 1862, James enrolled in the Harvard Law School. But he soon became more interested in writing book reviews and stories, and abandoned law. He made his first adult journey to Europe alone in 1869, and

the stories he wrote after that year reflect his belief that he could work best while living abroad. James settled in Europe permanently in 1875. After a year in Paris, where he knew such famous novelists as Ivan Turgenev and Gustave Flaubert, he made England his home.

Wins Critical Praise. James never married. He devoted his life to his work, which won him increasing praise from critics. But he never became a really popular novelist, and between 1890 and 1895, he tried for popular success as a dramatist. Even though he did not gain the success he sought, this venture had an effect on his work. He tried to give his later novels dramatic form. *The Awkward Age* (1899), for example, is composed almost wholly of conversations among the characters. Such difficult technical experiments are not always easy for the reader to follow. In addition, James' style grew progressively more elaborate after the 1880's.

Some of the greatest of his short stories are "The Real Thing," "The Beast in the Jungle," "The Pupil," "Four Meetings," "The Middle Years," and "The Jolly Corner."

Students of the novel do not agree in their preferences among his works. Some prefer the novels composed in the 1880's, such as *The Portrait of a Lady*, *The Princess Casamassima*, and *The Bostonians*. Some prefer those published later, such as *The Spoils of Poynton* (1897). Others favor the last three completed novels, *The Wings of the Dove* (1902), *The Ambassadors* (1903), and *The Golden Bowl* (1904). James' own comments on the novel and on his own books are gathered in the Prefaces to the collected edition published from 1907 to 1917. The Prefaces were reprinted as *Art of the Novel* (1934). Aside from fiction, he wrote books on travel, such as *The American Scene* (1907), three volumes of reminiscences, and many letters.

QUENTIN ANDERSON

JAMES, HENRY (1879-1947), was an American writer, philanthropist, and businessman. He was the son of William James, the psychologist and philosopher, and the nephew of Henry James, the great novelist.

James won the Pulitzer prize for biography in 1931 for his biography of *Charles W. Eliot* (1930), one of the greatest presidents of Harvard University. He also edited *The Letters of William James* (1920), and wrote *Richard Olney* (1923), a biography (see OLNEY, RICHARD).

Born in Boston, James practiced law there after his graduation from Harvard University. In 1912 he became manager of the Rockefeller Institute for Medical Research. Later he served as trustee of the institute and of the Carnegie Corporation.

EDWIN H. CADY

JAMES, JESSE WOODSON (1847-1882), was a bandit who robbed banks and trains in Missouri and nearby states. He was born in Clay County, Missouri, and grew up on a farm. In the Civil War, he and his older brother Frank joined Confederate guerrilla bands.

In 1866 James formed a robber band with his brother Frank, Coleman Younger, and others. They robbed banks in small towns, always carrying off the money in a grain sack. In Iowa, in 1873, they robbed their first train. In 1876, the band, then numbering eight, tried to rob a bank at Northfield, Minn. Citizens fought them off, killing three and capturing three of the bandits. Only Jesse and Frank James escaped. After three years, they went back to robbing trains. In 1881, Governor Thomas Crittenden of Missouri offered a \$5,000 reward for the arrest of either brother.

Late in 1881, Jesse James moved to St. Joseph, Mo., where he went by the name of Tom Howard and posed as a cattle buyer. Five months later he was shot in the back of the head by Robert Ford, a young man who had recently joined his band and turned traitor. Jesse later became the subject of a popular folk song. WAYNE GARD

JAMES, MARQUIS (1891-1955), an American author, wrote about American men and institutions. He won the Pulitzer prize for biography in 1930 for *The Raven, A Biography of Sam Houston* and in 1938 for *Andrew Jackson: Portrait of a President*. His history of the Insurance Company of North America, *Biography of a Business, 1792-1942*, won praise for being a readable account of a business institution. He then wrote similar histories of the Metropolitan Life Insurance Company and the Bank of America. His book *The Cherokee Strip* (1945) was an account of his Oklahoma boyhood. James was born in Springfield, Mo. CARL NIEMEYER

JAMES, SAINT, was the head of the Christian Church in Jerusalem during the first years after it was founded. He is referred to as the Lord's brother (Gal. 1: 19), but the term "brother" can also mean "cousin" or "kinsman." It is generally believed that James was a cousin of Jesus. The Jews called him "the Just," probably because of his strict observance of the law. The New Testament seldom speaks of James by name. But his life can be traced through the story of his church. History tells us that he died a martyr, killed by a mob in Jerusalem in A.D. 62.

The Epistle of James is one of seven letters called "General Epistles" because they are addressed to Christians in general. It forms the 20th book of the New Testament. The writer used the name of James, but not all scholars are satisfied that James wrote it. Some believe the author may have lived in Antioch because the Epistle is written in Greek and seems to contain Greek ideas. Its purpose was to warn Christians that profession of faith cannot take the place of good deeds. FREDERICK C. GRANT and FULTON J. SHEEN

JAMES, WILL (1892-1942), was an American writer and illustrator of stories about the West. He received the Newbery medal in 1927 for *Smoky* (1926), a book popular with both children and adults. James wrote and illustrated his books from his own experiences as a cowboy on the range. He wrote in the everyday language of the West.

James was born near Great Falls, Mont. His parents died when he was a small boy, and he was adopted by a French-Canadian trapper. He worked as a cowboy on ranches in all parts of the West from Texas to Canada. *Lone Cowboy* (1930) is the story of his life. His books also include *The Drifting Cowboy* (1925), *Home Ranch* (1935), *Cowboy in the Making* (1937), and *The American Cowboy* (1942). GEORGE E. BUTLER

JAMES, WILLIAM (1842-1910), a philosopher and psychologist, became widely known as the father of American pragmatic philosophy. He extended Charles Peirce's theory of meaning into a theory of truth. Peirce had said that the conceivable experienced effect of an idea constituted its whole meaning. James went further and asserted that the satisfactory working of an idea constitutes its whole truth. To James, an idea was true if it "worked" (see PRAGMATISM).

James did not spell out in what way the idea must work. Another pragmatist, John Dewey, was much

more precise, and carried pragmatism even further than James had. Dewey insisted that an idea was a plan of action and had to work in the way it was planned in order to be true.

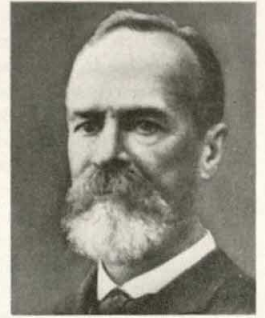
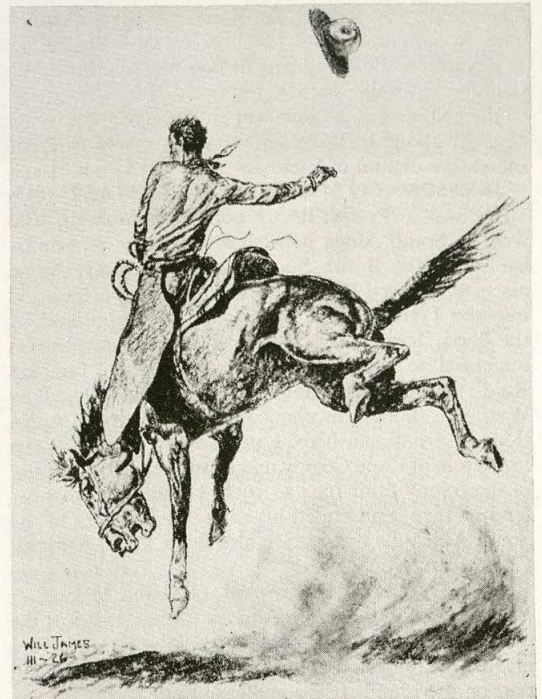
His Works. James was born in New York City on Jan. 11, 1842. He was a brother of Henry James, the novelist (see JAMES, HENRY). He first established his reputation as a psychologist at Harvard University. His *Principles of Psychology* (1890) was outstanding and made him known internationally. It also did much to establish psychology as an independent area. Soon after, James branched into philosophy.

James' chief writings include *The Will to Believe and Other Essays* (1897), *Varieties of Religious Experience* (1902), *Pragmatism* (1907), and *The Meaning of Truth* (1909).

His sprightly manner of writing led to the quip that William wrote psychology like a novelist while his brother, Henry, wrote novels like a psychologist. William James' facile writing style probably contributed to some popular misunderstanding of his work. Because he referred to truth as the "cash value" of an idea, he was widely interpreted, especially abroad, as being concerned only with material success. Actually, he was

Smoky, Written and Illustrated by Will James, is a story about a marvelous mouse-colored pony. In breezy Western slang, James tells of life on the ranch, range, and desert.

Charles Scribner's Sons



William James

JAMES BAY

vitaly interested in spiritual values and used his philosophy to defend many basic religious ideas.

His Beliefs. In his essay, "The Will to Believe," James defended the notion that a person has the right to believe things that lack scientific evidence. For example, if belief in immortality makes one's life more successful and significant, it is a valid idea without special scientific sanction.

James' wide interest in the realities of life even led him to examine the possibility of mental telepathy. His belief that experience is the foundation of philosophy led him to maintain that telepathy was probable. James never could accept "a closed system" of philosophy, a system that dictated in advance what experience could bring forth. He liked to call his own conception of the universe "open-ended."

EUGENE T. ADAMS

See also PEIRCE, CHARLES SANDERS.

JAMES BAY is the southern arm of Hudson Bay in northeast Canada. The bay was named for the English navigator, Thomas James. He explored the bay in 1631 and again in 1633 while trying to discover the Northwest Passage. James Bay lies between Ontario and Quebec. It is about 300 miles long and 160 miles wide.

Many islands lie in the bay. Akimiski, the largest island, is about 70 miles long. Several large rivers flow into the bay. Among them are the Moose, Nottaway, Albany, and Missinaibi.

BOSTWICK H. KETCHUM

See also HUDSON BAY.

JAMES RIVER is the largest waterway lying wholly within the state of Virginia. Jamestown, the first permanent English colony in America, was settled on the banks of this stream in 1607. The river rises in the Allegheny Mountains at the meeting point of the Jackson and Cowpasture rivers. From here the James flows southeastward for about 340 miles. It empties into Chesapeake Bay through the Hampton Roads channel. The Appomattox, one of the chief branches of the James, enters the river 66 miles from the sea. From this point down to the sea, the James is a tidal stream and can accommodate large ocean steamers. Smaller ships can sail about 40 miles farther up the river to Richmond, the capital of Virginia.

RAUS M. HANSON

JAMESON, JAYM sun, SIR LEANDER STARR (1853-1917), was a Scottish doctor born at Edinburgh, who went to South Africa in 1878 and became an administrator in the British South Africa Company. As an associate of Cecil Rhodes, he led an unauthorized raid into the Transvaal late in 1895 and was captured by the Boers. Turned over to his own government, he was sentenced to a short term in prison. The "Jameson Raid" played an important part in bringing on the Boer War, and, though imprisoned, Jameson became something of a national hero. Later, he was elected to the legislature of Cape Colony and served as prime minister of the colony from 1904 to 1908. He returned to England in 1912, and ended his career as president of the South Africa Company. See also BOER WAR; RHODES, CECIL JOHN.

JAMES L. GODFREY

JAMESTOWN is the capital of Saint Helena, a British island in the South Atlantic Ocean. It lies at the mouth of a mountain stream which flows into a harbor created by James Bay. Jamestown is the only city and port on the island. It is a center of trade.

JAMESTOWN, Va., was the first permanent English settlement in America. On April 26, 1607, three ships stopped at Cape Henry, at the southern entrance to Chesapeake Bay, after five months at sea. Captain Christopher Newport commanded this small fleet, which was made up of the ships *Susan Constant*, *Godspeed*, and *Discovery*. Colonists on the ships saw "faire meddowes and goodly tall trees" along the Virginia coast. The colonists consisted of 100 men and 4 boys. They had been sent out by a group of London merchants known as the London Company. These men came to America to search for treasure, to spread the Christian faith among the Indians, and to raise farm products that England could not grow at home.

The three ships sailed up the James River from Cape Henry for about 60 miles. The colonists landed on a little peninsula on the river on May 14, 1607, and established their settlement there. For location, see VIRGINIA (color map, Historic Virginia). They named both the river and their settlement in honor of King James I of England. The site of the colony turned out to be a bad choice. The ground was swampy, and the drinking water impure. A meager and unwholesome diet weakened the men, and many of them soon died of malaria, pneumonia, and dysentery. To further complicate their problems, they had not expected the sharp contrasts of American climate.

The Jamestown settlement suffered one dreadful disaster after another. Captain John Smith held the colony together when he took control from mid-1608 to mid-1609. He forced the settlers to work, and bought corn from the Indians. But an accident in 1609 forced Smith to return to England for treatment of his wounds. Fire, drought, Indian attacks, disease, starvation, and lack of another strong leader brought the colony to its lowest ebb in the winter of 1609. The colonists later called that winter "the starving time" in Virginia. The arrival of Governor Thomas West, Lord de la Warre, in 1610 with new settlers and fresh supplies saved Jamestown from abandonment. The settlement could not have survived without the strong and intelligent leadership provided by Captain John Smith and Lord de la Warre.

About 18,000 Indians lived in Virginia during the early 1600's. More than 30 of the tribes in the area united to form a confederacy under the mighty chief

Wives of the Jamestown Settlers Came from England to the new land after homes had been built and farms started.

Brown Bros.





Thomas L. Williams, Jamestown Festival Commission

Jamestown, Va., celebrated the 350th anniversary of its founding in 1957. Visitors to the celebration saw full-size replicas

of the three ships that brought the first permanent settlers to America, the *Susan Constant*, the *Godspeed*, and the *Discovery*.

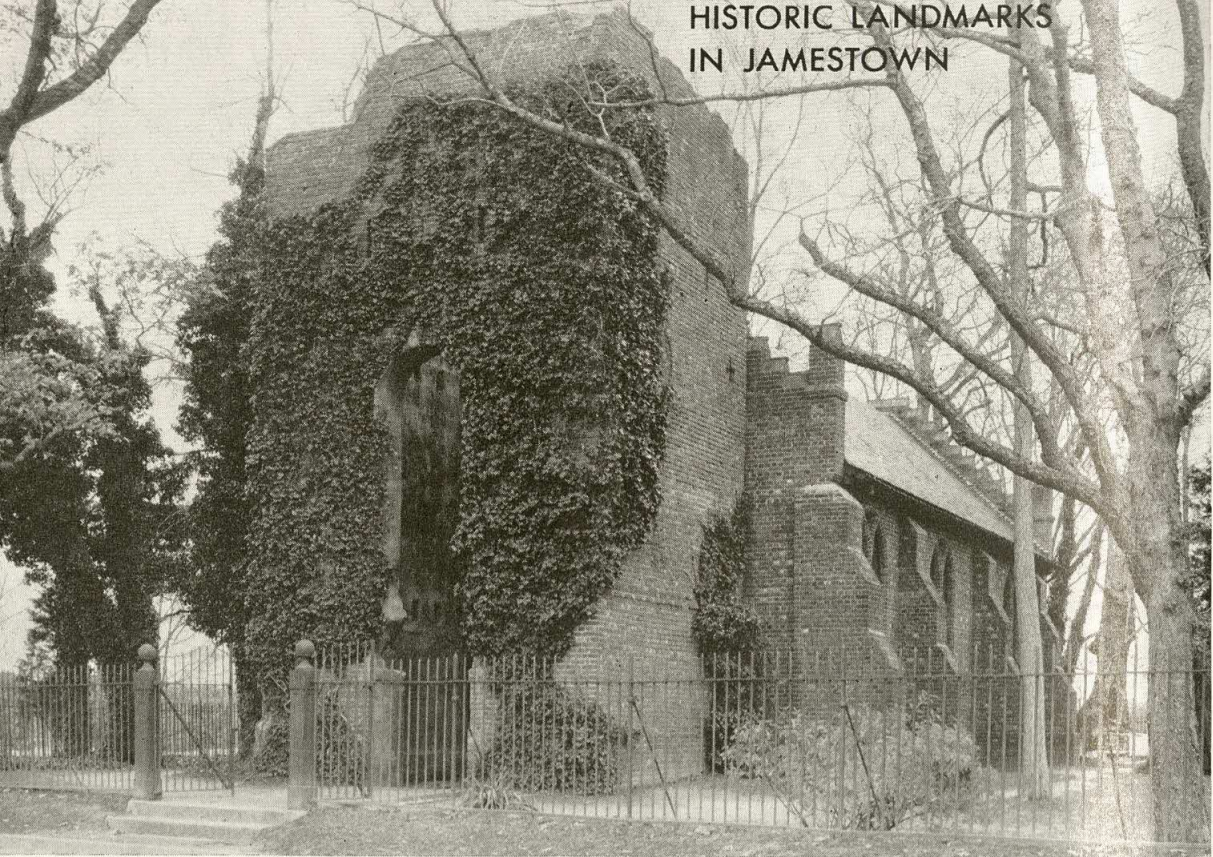
Powhatan. This chieftain was the father of Pocahontas, the Indian princess who was reported to have saved the life of Captain John Smith. In 1614, Pocahontas married John Rolfe, one of the colonists. This marriage brought about eight years of peace between the settlers and the Indians, and at least temporarily overcame the menace of hostile raids.

The agricultural and industrial activities of the colony got off to a slow start at first. The colonists made unsuccessful attempts to produce silk, grapes, and other items that were unsuited for the Virginia climate. Early industries included glass blowing, iron smelting, the making of potash, and shipbuilding. The first farm products to be raised successfully were hogs and Indian corn. In 1612, John Rolfe introduced a new type of tobacco to the colony by bringing seed from the Spanish island of Trinidad. This tobacco was sweeter than the native Virginia plant, and the settlers found a ready

market for it in Europe. The tobacco, together with the corn and hogs, provided a solid basis for the colony to become rich and satisfied.

The year 1619 was an especially important year in the history of the Jamestown colony. The first legislative assembly in the Western Hemisphere met in the town in that year. This assembly, called the *House of Burgesses*, served as the model for many of the law-making bodies that have since given the common people representation and self-government throughout the United States (see HOUSE OF BURGESSSES). Before 1619, only a few married women and female servants lived in Jamestown. In 1619, the Virginia Company tried to encourage young men to make permanent homes at the colony by sending a number of "young, handsome and honestly educated maids" to become wives for the bachelors. Another important event of 1619 was the arrival of a Dutch ship at Jamestown with

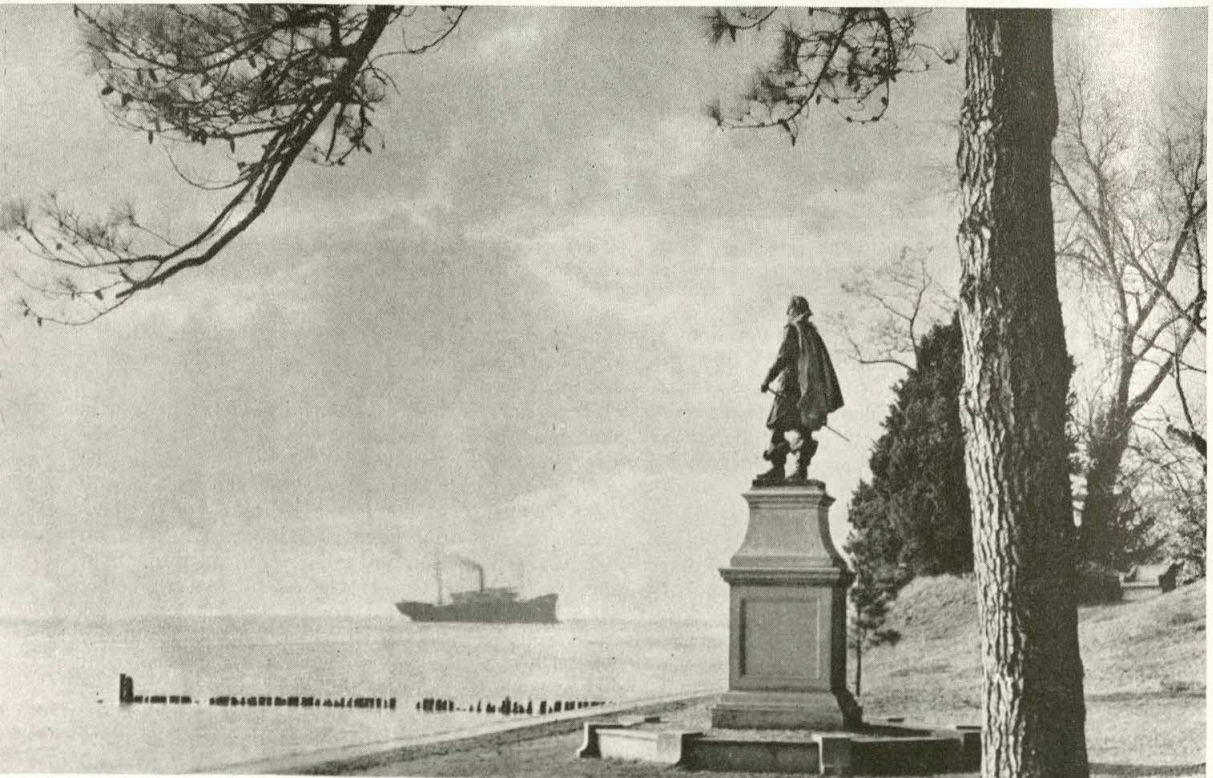
HISTORIC LANDMARKS IN JAMESTOWN



The Ruins of the Old Church Tower at Jamestown, Va., mark the site of the first permanent English settlement in America.

The church itself was reconstructed on the stones of the foundation laid by the hardy colonists in the 1600's.

National Park Service



Statue of John Smith faces the James River at Jamestown, Va. Smith, a soldier and adventurer, was a leader of English

colonists who founded Jamestown in 1607. He saved the colonists from starvation by getting corn and other food from the Indians.

Va. Dept. of Conservation & Development

20 Negroes. These Negroes, and the many who followed them, had much to do with making the colony a prosperous one.

In 1622, the Indians broke the peace which had lasted since 1614. They treacherously attacked the settlements around Jamestown, and killed about 350 of the colonists. The town itself received a warning of the Indian uprising, and was able to resist the attack. The red men rose again in 1644 and killed about 500 people, mostly in outlying settlements. But Jamestown was too firmly established for either of these bloody experiences to stop the growth of the colony. Both times, the colonists struck back with terrible vengeance, driving the Indians into the wilderness. See **INDIAN WARS** (Colonial Days).

Ill luck overtook Jamestown in the late 1600's. The town was burned to the ground in 1676 during Bacon's Rebellion, a revolt against the royal governor led by planter Nathaniel Bacon (see **BACON'S REBELLION**). Fire again destroyed the settlement in 1698. These disasters caused the people in Virginia to transfer their capital to Williamsburg in 1699, rather than again rebuild Jamestown. The town of Jamestown itself fell into decay after that time.

The site of the Jamestown settlement no longer stands on a peninsula. It now lies on an island, having been cut off from the mainland by water. For many years, only a few foundation stones and the ruined tower of a brick church stood as reminders of the first permanent English settlement in America. The Association for the Preservation of Virginia Antiquities controls the land around the ruined church, and the National Park Service owns the rest of the area. The National Park Service operates its part of Jamestown as part of the Colonial National Historical Park.

In 1957, Virginia celebrated the 350th anniversary of the founding of Jamestown. The National Park Service and the Association for the Preservation of Virginia Antiquities built an exact reproduction of the original town on a nearby location. Archaeologists working in the area discovered many relics of the original town, and published their findings widely. The restored town of Jamestown now draws thousands of tourists each year.

FRANCIS B. SIMKINS

Related Articles in WORLD BOOK include:

Bacon's Rebellion	London Company	Smith, John
Glass (Early	Pocahontas	Virginia (History)
American)	Rolfe, John	Williamsburg

JAMESTOWN, N.Y. (pop. 41,818; alt. 1,313 ft.), is a resort and industrial city, and one of the large furniture-manufacturing centers of the East. The city is located at the southeastern tip of Chautauqua Lake, where the famous Chautauqua summer school is conducted. For location, see **NEW YORK** (color map).

In addition to wood and metal furniture, Jamestown factories manufacture textile products, automobile parts, tools, voting machines, ball bearings, and metal equipment.

The city owns and operates its electric and water plants. It is on the main line of the Erie Railroad and also has airline service. Jamestown was named in honor of James Prendergast, its first settler. It was founded in 1810 and incorporated as a village in 1827. Cabinet-makers from Sweden settled there in the 1850's and established Jamestown as a furniture-making center.

JANSSEN, ZACHARIAS

Jamestown received its charter as a city in 1886. It has a mayor-council government.

WILLIAM E. YOUNG

JAMESTOWN COLLEGE is a coeducational liberal-arts school at Jamestown, N.Dak. It is affiliated with the Presbyterian church. Courses in arts and sciences and nursing lead to B.A. and B.S. degrees. The college also maintains a summer session and a campus radio station. Jamestown was founded in 1884. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

JAMMU AND KASHMIR. See **KASHMIR** (History).

JAMSHEDPUR, JAHM shed poor (pop. 218,162; alt. 465 ft.), is the steel-manufacturing center of India. The city is in the state of Bihar, about 150 miles west of Calcutta. It lies near great deposits of iron, coal, mica, and manganese (see **INDIA** [color map]).

JANÁČEK, yah NAH check, LEOŠ (1854-1928), was a Czech composer whose music was strongly influenced by the folk songs of his country. His opera *Jenufa* (1904), first performed in Brno and Vienna, brought him fame. He wrote 10 other operas, and much choral, chamber, and orchestral music. Born at Hukvaldy, Moravia, Janáček grew up in great poverty. He studied in Brno and Prague, and later in Leipzig and Vienna. He founded a school of music in Brno, and taught there most of his life.

HALSEY STEVENS

JANICULUM. See **ROME** (Location, Size, and Description).

JANIS, ELSIE (1889-1956), an American actress, became popular in vaudeville when she was still a child. Her clever imitations delighted audiences. During World War I, she gave more than 600 performances for the American Expeditionary Forces overseas. She was the only woman to receive a British pass to enter the front lines. She wrote and acted in a review, *Elsie and Her Gang* (1919), based on her wartime experiences. She was born in Columbus, Ohio.

NARDI REEDER CAMPION

JANITOR is a person who takes care of a school, office, public, or apartment building. The name comes from the Roman god *Janus*, who guarded the gates of Rome and was two-faced so that he could see in both directions. The word *janitor* is now being replaced by the terms *custodian* or *superintendent*.

JANIZARY, JAN ih ZAIR ih, was a soldier who belonged to a special body of Turkish infantry. In Turkish the word *Janizary* means *new troops*. The Janizaries, or *Janissaries*, were professional soldiers, organized in the 1300's by Orkhan, founder of the Ottoman Empire. He trained them in the Islamic religion and in warfare. Their ranks were filled by slaves, picked native troops, and sons of captured Christians. They served the Turkish rulers until 1826, when they revolted and were ruthlessly put down. The use of Janizaries in Turkish infantry ended with the revolution, when they were replaced by regular troops.

WILLIAM F. McDONALD

JANSEN, JAN s'n, CORNELIUS (1585-1638), a Roman Catholic bishop of Ypres, Belgium, wrote a book *Augustinus* (1640), which was the source of the heresy called *Jansenism*. His ideas introduced a rigorous Calvinistic piety into Roman Catholic life by discouraging frequent communion. The Holy Office condemned the book. Cornelius Jansen was born at Acquoi, The Netherlands.

JAMES A. CORBETT and FULTON J. SHEEN

JANSSEN, ZACHARIAS. See **MICROSCOPE** (History).

JANUARY, the first month of the year, is named for Janus, a Roman god. According to legend, Numa Pompilius added January and February to the end of the 10-month Roman calendar, about 700 B.C. He gave the month 30 days. In 46 B.C., Julius Caesar added a day and made January the first month. The Norsemen named the month for Thor, their god of thunder and storms. The Anglo-Saxons called it *Wolfmonth* because wolves came into the villages in winter in search of food.

Activities. In the northern half of the world, January is usually the coldest month of the year. Nature is quiet. The birds travel less, and many animals, such as bears and woodchucks, sleep both day and night. Plants rest in preparation for the next growing season. In the southern half of the world, January is usually the warm-

est month of the year. Plant life is growing, and animals are active.

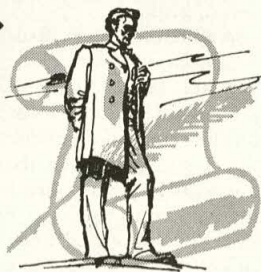
Special Days. Christian countries celebrate January 1 as New Year's Day. On January 6, the 12th day and 12th night after Christmas, Roman Catholic, Episcopal, and Eastern Orthodox churches celebrate the Epiphany, the coming of the wise men. It is sometimes called *Twelfth Night* or *Little Christmas*, and is frequently a time for giving presents.

January 19 is a legal holiday in many southern states, honoring the birthday of Robert E. Lee, the Confederate general.

About the middle of January, the Hindus celebrate Makara Sankranti, a great bathing festival. They try, if they can, to bathe in the Ganges River, considered especially sacred. If possible, they bathe at the city of Allahabad, where the Ganges and the Jumna rivers meet.

IMPORTANT JANUARY EVENTS

- 1 Lorenzo de' Medici, patron of the arts and ruler of Florence, Italy, born 1449.
- Bartolomé Murillo, Spanish painter, born 1617.
- Paul Revere, Revolutionary patriot, born 1735.
- Revolutionary War hero Anthony Wayne born 1745.
- Flagmaker Betsy Ross born 1752.
- Haiti celebrated its independence, 1804.
- Abraham Lincoln issued the Emancipation Proclamation, 1863.
- J. Edgar Hoover, director of the FBI, born 1895.
- Commonwealth of Australia proclaimed, 1901.
- United States parcel post service began, 1913.
- 2 Colonial leader Nathaniel Bacon born 1647.
- James Wolfe, conqueror of Quebec, born 1727.
- American poet Philip Freneau born 1752.
- Georgia ratified the Constitution, 1788.
- Educator William Lyon Phelps born 1865.
- 3 Cicero, Roman statesman, born 106 B.C.
- Women's-rights leader Lucretia Mott born 1793.
- Father Joseph Damien, Belgian missionary to lepers, born 1840.
- Clement Attlee, British statesman and Labour party leader, born 1883.
- 4 Fairy-tale collector Jacob Grimm born 1785.
- Stephen A. Douglas introduced the Kansas-Nebraska Act into the Senate, 1854.
- George Washington Carver, famous agricultural chemist, born about 1864.
- Utah became the 45th state, 1896.
- 5 Stephen Decatur, American naval hero, born 1779.
- Nellie Tayloe Ross became the first woman governor of a state, Wyoming, 1925.
- 6 Joan of Arc, French heroine of the siege of Orléans, born 1412.
- Heinrich Schliemann, German archaeologist and discoverer of the ruins of Troy, born 1822.
- Gustave Doré, French painter and illustrator, born 1832.
- Carl Sandburg, American poet, born 1878.
- New Mexico became the 47th state, 1912.
- 7 Israel Putnam, American patriot, born 1718.
- First American presidential election, 1789.
- Millard Fillmore, 13th President of the United States, born in Locke, N.Y., 1800.
- Charles Addams, American cartoonist, born 1912.
- William M. Burton invented a petroleum-cracking



process, 1913.

- 7 Transatlantic commercial telephone service began, New York to London, 1927.
- 8 Amendment 11 to Constitution, modifying the Supreme Court's power, proclaimed, 1798.
- Andrew Jackson defeated the British at the Battle of New Orleans, 1815.
- Confederate general James Longstreet born 1821.
- Peter Arno, American cartoonist, born 1904.
- President Wilson stated his "Fourteen Points" before Congress, 1918.
- 9 Connecticut ratified the Constitution, 1788.
- First balloon ascent in America, 1793.
- Carrie Chapman Catt, American woman-suffrage leader, born 1859.
- 10 Thomas Paine published his *Common Sense*, 1776.
- John W. Root, American architect, born 1850.
- First great oil strike in Texas, 1901.
- League of Nations established, 1920.
- First UN General Assembly met, London, 1946.
- 11 Statesman Alexander Hamilton born 1755 or 1757.
- Sir John Macdonald, first prime minister of Canada after the confederation, born 1815.
- Bernard DeVoto, American writer, born 1897.
- 12 Governor John Winthrop of Massachusetts born 1588.
- John Hancock, first signer of the Declaration of Independence, born 1737.
- J. H. Pestalozzi, pioneer educator, born 1746.
- Jack London, American novelist, born 1876.
- 13 Salmon P. Chase, antislavery leader and Chief Justice of the United States, born 1808.



MILLARD FILLMORE

- Horatio Alger, American author, born 1834.
- 14 Benedict Arnold, American Revolutionary general and traitor, born 1741.
- Albert Schweitzer, physician, musician, philosopher, and missionary, born 1875.
- Philippine leader Carlos Romulo born 1901.
- Casablanca Conference opened, 1943.

January Symbols. The snowdrop is the special flower for the month. It often blooms in the snow. Some persons consider the carnation the special flower. The garnet is the January gem.

GRACE HUMPHREY

Quotations

Ring out the old, ring in the new,
Ring, happy bells, across the snow;
The year is going, let him go;
Ring out the false, ring in the true.

Alfred, Lord Tennyson

Blasts of January would blow you through and through.
William Shakespeare

Related Articles in **WORLD BOOK** include:

Calendar	Janus	Thor
Epiphany	New Year's Day	Twelfth Night
Garnet	Snowdrop	

IMPORTANT JANUARY EVENTS



- 15 Molière, French dramatist, born 1622.
—British Museum opened, 1759.
—John C. Breckinridge, Confederate general, born 1821.
- 16 France recognized American independence, 1778.
—Robert W. Service, poet of the Yukon, born 1874.
—Civil Service system established, 1883.
—Amendment 18 to the Constitution, prohibiting the sale of alcoholic beverages, ratified, 1919. ▼



- 17 Benjamin Franklin, American statesman and inventor, born 1706.
—Anton Chekhov, Russian playwright, born 1860.
—David Lloyd George, British statesman and prime minister, born 1863.
—Aviation pioneer Glenn L. Martin born 1886.
- 18 Daniel Webster, American statesman, born 1782.
—Versailles Peace Conference opened, 1919.
- 19 James Watt, Scottish inventor, born 1736.
—Robert E. Lee born 1807.
—Edgar Allan Poe, American author, born 1809.
—Steelmaker Sir Henry Bessemer born 1813.
—Paul Cézanne, French painter, born 1839.
- 20 Pianist Josef Hofmann born 1876.
—Mischa Elman, American violinist, born 1891.
—Inauguration Day for the President every fourth year, beginning in 1937.
- 21 Explorer John C. Frémont born 1813.
—General "Stonewall" Jackson born 1824.
—Lenin died, 1924.
—The *Nautilus*, first atomic-powered ship in the world, launched, 1954.
- 22 Francis Bacon, English author, born 1561.



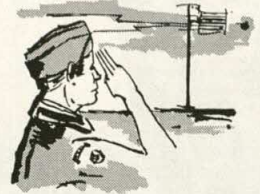
FRANKLIN D. ROOSEVELT

JANUS, JAY nus, was the god of doors and gates in Roman mythology. Because a person symbolically passes through a door, when he enters something new, Janus became the god of the beginning of things. People prayed to him when they were about to start something new. January, the first month of the Julian calendar, was named after him, and the first day of the month was sacred to him. He also presided over the entire year. In prayer, he was named first in any list of gods, even before Jupiter.

Janus is usually represented with two faces, one looking forward and the other backward. He is often shown carrying keys and a staff. His temple doors in Rome were open during times of war and closed during times of peace.

HENRY LLOYD STOW

- 22 Lord Byron, English poet, born 1788.
—Dramatist August Strindberg born 1849.
—Fred M. Vinson, American jurist, born 1890.
- 23 French painter Édouard Manet born 1832.
- 24 Gold discovered in California, 1848.
—Air force leader Hoyt Vandenberg born 1899.
—First English Boy Scout troop organized, 1908. ▲
- 25 Robert Boyle, Irish physicist, born 1627.
—Robert Burns, Scottish poet, born 1759.
—Transcontinental telephone service established in United States, 1915.
- 26 Sydney founded, 1788; celebrated as Australia Day.
—Michigan became the 26th state, 1837.
—American general Douglas MacArthur born 1880.
—Explorer Roy Chapman Andrews born 1884.
—India became a republic, 1950; celebrated as Republic Day.
- 27 Composer Wolfgang Amadeus Mozart born 1756.
—Lewis Carroll, English author of *Alice in Wonderland* and other stories, born 1832.



WILLIAM MCKINLEY

- 29 William McKinley, 25th President of the United States, born in Niles, Ohio, 1843.
—Kansas became the 34th state, 1861.
—Frederick Delius, English composer, born 1862.
- 30 Congress bought Thomas Jefferson's library as the nucleus of the Library of Congress, 1815.
—Franklin D. Roosevelt, 32nd President of the United States, born at Hyde Park, N.Y., 1882.
—Adolf Hitler named Chancellor of Germany, 1933.
—Mohandas K. Gandhi, spiritual and political leader of India, assassinated, 1948.
- 31 Gouverneur Morris, American Revolutionary War patriot, born 1752.
—Franz Schubert, Austrian composer, born 1797.
—Philanthropist Nathan Straus born 1848.



Japan Travel Bureau

JAPAN

日本

Mount Fuji and the pink cherry blossoms of spring have been used by Japanese artists for many hundreds of years to represent their homeland.

JAPAN is an island country in the Pacific Ocean. It lies along the eastern coast of Asia. An old Japanese legend tells how Amaterasu-O-Mi-Kami, the goddess of the sun, sent one of her sons to rule the islands of Japan. The Japanese call their country **NIPPON**, or **NIHON**, which means *source of the sun*. Westerners often call Japan the *Land of the Rising Sun*. The capital and largest city is Tokyo.

Four large islands and many smaller ones make up the country. The islands extend for about 1,250 miles. If the islands of Japan were placed along the eastern

coast of the United States, they would run from Maine to northern Florida. Altogether, the islands have a little more land than Iowa and Minnesota, but they have about 15 times as many people.

American tourists enjoy visiting Japan, because it differs from the United States in so many ways. The land is so crowded that almost every bit is carefully tended. This gives the mountainous countryside a gardenlike appearance. Neon signs light the big cities. But most of the people live in small bamboo houses.

Japan produces many kinds of manufactured goods,

FACTS IN BRIEF

Type of Government: Constitutional monarchy.

Capital: Tokyo.

Divisions: 46 prefectures.

Head of State: Emperor.

Prime Minister: Elected by the Diet and responsible to it.

Parliament: A Diet of two houses. The 467 members of the House of Representatives are elected for four-year terms; the 250 members of the House of Councillors are elected for six-year terms.

Area: 142,773 square miles. *Greatest distance* (north-south), 1,250 miles; (east-west), 373 miles. *Coast line*, 16,665 miles.

Elevation: *Highest*, Mount Fuji, 12,388 feet; *lowest*, sea level.

Population: 89,275,529. *Density*, about 626 persons to the square mile. *Distribution*, urban, 38 per cent; rural,

62 per cent.

Chief Products: *Agriculture*, bamboo, barley, oranges, raw silk, rice, soybeans, tea, tobacco, wheat. *Fishing Industry*, crabs, fish products, flounder, herring, mackerel, salmon, sardines, shrimp, trout, tuna, whales. *Manufacturing and Processing*, aluminum, cameras and lenses, chemicals, cotton and silk materials, dyes, iron and steel products, paint, paper, rayon, soap. *Mining*, coal, copper, iron, manganese, pyrites, silver, uranium.

Flag: A large red disk, representing the sun, is centered on a white field. See **FLAG** (color picture, Flags of Asia and the Pacific).

National Anthem: "Kimi-ga-yo" ("The Reign of Our Emperor").

National Holiday: Birthday of the Emperor, April 29.

Money: *Basic unit*, Yen. For its value in dollars, see **MONEY** (table, Values). See also **YEN**.

and sells them to the countries of Asia. The delicate and graceful paintings and wood-block prints of Japanese artists are famous throughout the world.

The Land and Its Resources

Location, Size, and Surface Features. The main island of Japan is Honshu. It is often called the home island. Two smaller islands, Shikoku and Kyushu, lie south of Honshu. The fourth island, Hokkaido, lies north of Honshu. There are hundreds of small islands along the coasts. Parts of two groups of islands belong to Japan. One group, the Ryukyus, runs south of Kyushu. The other island group, the Bonins, extends midway between Tokyo and Guam.

The Japanese islands are part of a great sunken mountain range along the shores of the northern Pacific Ocean. The mountains of Alaska, the Aleutian Islands, and the Kuril Islands also are part of this range. So are the Philippine Islands and the Ryukyu Islands to the south.

Six out of seven square miles of the surface of Japan are mountainous. There are few broad plains on any of the islands. The Kanto Plain starts at the head of Tokyo Bay and extends to about the middle of Honshu. The great cities of Osaka, Kobe, and Kyoto lie on the Kansai Plain, in west-central Honshu. Nagoya lies on the smaller Nobi Plain. But most of Japan slopes up from the sea to hills, plateaus, and high peaks.

The Sea of Japan separates Hokkaido and Honshu from northeastern Asia. The Korea Strait, about 110 miles wide, runs between Japan and Korea. The *Color Map* shows that western Japan and China are separated by the East China Sea.

Japan Lies East of the Continent of Asia.



Japan's most important physical features are its mountains. Among them are more than 500 volcanoes. Many of Japan's volcanoes have been active within the last 500 years. The beautiful mountains have been an inspiration for Japanese painters and poets. But the mountains crowd the islands so that there is little room for anything else. There is so little land that farms must be kept small, and cities are crowded. The mountains have made it difficult to build highways and railroads.

Mount Fuji is the highest and best-known Japanese mountain. The Japanese call it *Fujiyama* (*yama* means *mountain* in Japanese). Sometimes they call it *Fuji-san* (*san* in this case may mean *beautiful*). Fuji is an inactive volcano. Active volcanoes include Asamayama, Sakurajima, Komagatake, and Asozan.

Rivers, Lakes, and Bays.

Thousands of small streams flow down the mountain-sides, but there are no long rivers. Boats can only sail for short distances on any of the rivers. The Ishikari, in Hokkaido, is the longest river, with a course 275 miles long. In some of the large cities, such as Tokyo and Osaka, flat-bottomed boats use the many canals.

Japan has many lakes. Some lie in the craters of dead volcanoes, and others in mountain valleys. The largest lake is Biwa, northeast of Kyoto in central Honshu. The Japanese have built summer resorts on the shores of the lakes. There are many hot springs in all parts of Japan. Shikoku has several geysers and hot mud springs, much like those in Yellowstone Park. Japan has a sea of its own, the Inland Sea. This is the sea lying between Honshu, on the north, and Shikoku and Kyushu, on the south. It has always been an important waterway for the Japanese. Many tourists have admired the Inland Sea for its beautiful waters and many small wooded islands. The number of islands in the sea has been estimated at 3,000. Japan covers 142,773 square miles.

The hundreds of bays and inlets along Japan's coast provide many excellent harbors. The largest bay is Tokyo Bay, which is over 30 miles long. Only the southwestern part of the bay is deep enough for large ships. Other large bays are Ise Bay near Nagoya, Uchiura Bay in Hokkaido, and Nagasaki and Kagoshima bays in Kyushu.

Coast Line. Japan has more than 1,400 harbors along its coasts. The shore line is so broken and jagged that it is unusually long compared to the area of the islands. There is about one mile of shore line for every 8½ square miles of area.

Earthquakes. Scientists believe that Japan is a mountain range that has not yet stopped growing. They



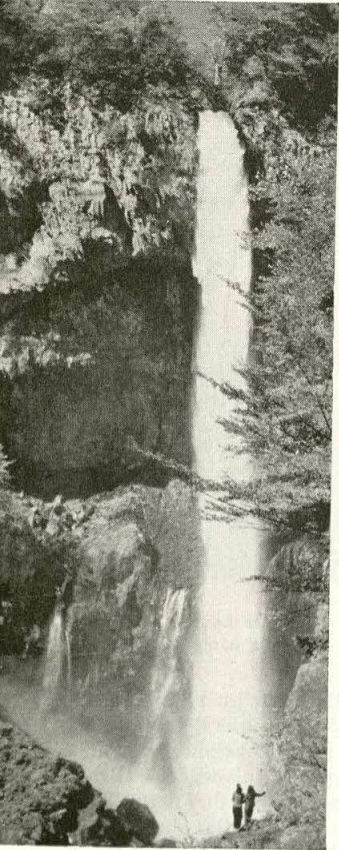
Japan Is Larger than both Minnesota and Iowa together.

THE JAPANESE ENJOY THEIR NATURAL WONDERS

Excursion Boats with straw-mat roofs carry sight-seers along the short, scenic rivers.



Horace Bristol; Japan Travel Bureau; Wide World



The Highest Waterfall in Japan is the Kegan Falls, more than 340 feet high. It is one of the attractions in Nikko National Park, on Honshu.

The Trout-Fishing Season brings out many men and women anglers. These fishermen on the Kano River on Honshu use long bamboo poles.



believe that the eastern shores of the islands along the Pacific Ocean are slowly rising, while the western coast along the Sea of Japan is sinking. There are many earthquakes in Japan because of this gradual movement of the earth's crust. Each year there are about 1,500 earth tremors in the islands, but most of them cause little damage. In 1923, however, the earthquake in Tokyo and Yokohama, and the fires which followed it, killed almost 100,000 persons.

Natural Resources. Japan has few natural resources. Its most precious possession is its soil. So much of the area is mountainous that only about one acre in seven can be farmed. The small amount of farm land must be used carefully. Forests grow on the rest of the land below the tops of the highest mountains. There is little grazing land except on Hokkaido. Japan's best farm land is in the river valleys. Crops do not grow well in the volcanic soil of the mountainsides. Even the best land is so worn out from hundreds of years of farming that farmers must use a great deal of fertilizer.

Japan's forests are a great national resource. The Japanese use their trees for lumber and for making charcoal, which is used for fuel in most Japanese homes. Many of the trees are evergreens, but there also are maples, oaks, and other hardwoods. Japan prizes its giant *Cryptomeria* trees, which are somewhat like the *Sequoia* trees of California.

Bamboo grows widely as far north as northern Honshu. It has many uses. Both people and animals eat bamboo shoots, or sprouts. The Japanese build houses with long bamboo poles, and use bamboo stalks to make fishing poles and the roofs of houseboats. They split long, narrow bamboo stalks and weave them into baskets, luggage, and mats and rugs.

Mulberry trees have been planted on hundreds of acres of land. The mulberry leaves are used to feed silkworms. Apple trees grow in northern Japan, and pear, orange, and tangerine trees grow in central and southern Japan. The famous Japanese cherry trees do not bear fruit, and are grown only for their beauty. Japanese gardens are lovely with purple and white wisteria, and with chrysanthemums.

The animal life is varied. The black bear, monkey, marten, weasel, and flying squirrel are found on the main islands. The fox and the badger of Japan are characters in many old Japanese tales. Nightingales sing in the forests.

Japan's richest resources in animal life are the fishes off the islands' shores. Japanese coastal waters are among the most important fishing grounds in the world.

Regions and Prefectures

††CHUGOKU*	G 4
Pop.	6,992,008
Hiroshima,*	2,149,044 G 4
Okayama,*	1,689,800 G 4
Shimane,*	329,066 G 4
Tottori,*	614,259 G 5
Yamaguchi,*	1,609,839 G 3
HOKKAIDŌ	C 8
Pop.	4,773,087
Hokkaidō,*	4,773,087 C 8
††HOKURIKU*	F 6
Pop.	5,214,855
Fukui,*	754,055 F 6
Ishikawa,*	366,187 F 6
Niigata,*	2,473,492 F 6
Toyoama,*	1,021,121 F 6
††KANTŌ (KWANTŌ)*	L15
Pop.	20,649,430
Chiba,*	2,205,060 L16
Gumma,*	1,613,549 L16
Ibaraki,*	2,064,037 L16
Kanagawa,*	2,919,497 L16
Saitama,*	2,622,623 L15
Tochigi,*	1,547,580 L15
Tōkyō,*	8,037,084 L15
††KINKI*	G 5
Pop.	12,811,830
Hyōgo,*	3,620,947 G 5
Kyōto,*	1,935,161 G 1
Nara,*	776,861 M11
Ōsaka,*	4,618,308 M11
Shiga,*	853,734 L12
Wakayama,*	1,006,819 G 5
KYŪSHŪ	H 3
Pop.	12,937,467
Fukuoka,*	3,859,764 H 3
Kagoshima,*	2,044,112 I 3
Kumamoto,*	1,895,663 H 3
Miyazaki,*	1,139,384 I 3
Nagasaki,*	1,747,596 H 2
Ōita,*	1,277,199 H 3
Saga,*	973,749 H 3
SHIKOKU	H 4
Pop.	4,245,243
Ehime,*	1,540,628 H 4
Kagawa,*	943,823 G 5
Kōchi,*	882,683 H 4
Tokushima,*	878,109 G 5
††TŌHOKU*	E 8
Pop.	9,334,442
Akita,*	1,348,871 E 8
Aomori,*	1,382,523 E 8
Fukushima,*	2,095,237 F 8
Iwate,*	1,427,097 E 8
Miyagi,*	1,727,065 E 8
Yamagata,*	1,353,649 E 8
††TŌKAI (TOKAIDŌ)*	G 6
Pop.	7,905,226
Aichi,*	3,769,209 M13
Mie,*	1,485,582 M12
Shizuoka,*	2,650,435 M12
††TŌSAN*	G 6
Pop.	4,411,941
Gifu,*	1,583,605 M13
Nagano,*	2,021,292 M14
Yamanashi,*	807,044 M14

Cities

Abashiri, 42,961	B10
Agematsu, 9,540	L13
Aho, 3,210	M12
Aikawa, 14,232	E 7
Ajigasawa, 23,026	D 8
Asahi, 120,200	G 5
Akechi, 6,210	L13
Aki, 29,841	H 4
Akita, 190,202	E 8
Akkeshi, 18,591	C10
Amagasaki,	
335,513	G 5, M11
Anjō, 52,820	M13
Aomori, 183,747	D 8
Arai, 12,901	M13
Arao,* 67,504	H 3
Asahigawa, 164,971	C 9

Ashibetsu,* 68,091	C 9
Ashikaga,	
102,078	F 7, K15
Ashio, 18,510	F 7
Asuke, 16,820	L13
Atami, 39,812	L15
Atsugi, 39,409	L15
Atsuma	C 8
Ayabe, 52,310	L11
Beppu, 102,330	H 3
Bibai, 15,000 (88,667)*	C 8
Chiba, 197,962	G 8, L16
Chichibu, 44,671	L15
Chigasaki,* 56,595	L15
Chikura, 19,188	M15
Choshi, 88,157	G 8, L16
Echigawa, 8,749	L12
Embetsu, 8,804	B 8
Ena (Nakatsu), 31,621	L13
Enari, 18,082	B 9
Enari, 30,279	L14
Esashi, 15,084	D 8
Esashi, 11,511	D 8
Fujieda,* 61,466	G 7
Fujinomiya,* 57,307	L14
Fujisawa,* 109,101	L15
Fujiyoshida, 39,116	L14
Fukuchiyama,	
62,602	G 5, L11
Fukue, 26,736	M13
Fukui, 125,301	F 6
Fukuoka, 25,391	D 8
Fukuoka, 544,312	H 3
Fukushima, 127,259	F 8
Fukushima, 9,083 G 6,	L13
Fukuyama, 76,484	G 4
Funabashi, 114,921	L16
Funakawa, see Oga	
Furano, 21,743	C 9
Furukawa, 8,873 F 6,	K13
Fuse, 176,052	G 5, M11
Futamata, 11,442	M13
Gamagōri, 51,900	M13
Gero, 16,163	L13
Gifu, 259,047	G 6, L12
Gojō, 13,596	M11
Gotemba, 38,796	L14
Haboro, 24,270	B 8
Hachiman, 22,954	L12
Hachinohe, 141,771	D 8
Hachioji, 133,447	G 7, L15
Hagi, 57,621	G 3
Hakodate, 242,582	D 8
Hamada, 45,638	G 4
Hamamatsu,	
268,792	G 6, M13
Hamatombetsu	B 9
Hanama, 61,728	E 8
Handa, 67,827	M12
Hashimoto, 32,449	M11
Hikone, 51,613	L12
Himeji, 252,315	G 5
Himi,* 68,611	F 6
Hiratsuka, 67,022 G 7,	L15
Hirayama,	
111	L11
Hiroaki, 138,953	D 8
Hiroshima, 357,287	G 4
Hita,* 69,256	H 3
Hitachi, 131,011	F 8
Hitoyoshi, 47,877	H 3
Hōfu, 96,821	G 3
Hokota, 29,720	K16
Ichikawa, 129,700	L15
Ichinomiya, 157,025	L12
Ichinoseki, 58,292	E 8
Iida, 34,052	G 6, L13
Iijima, 8,189	L13
Iizuka,* 61,650	H 3
Ikeda, 50,073	M11
Imabari, 96,654	G 4
Imari,* 81,625	H 2
Imashita, 11,682	L12
Ina, 45,783	L15
Inatori, 7,990	M15
Ine, 7,653	L11
Isahaya, 65,593	H 3
Isezaki, 85,380	F 7, K15
Ishinomaki, 66,133	E 8
Ishiohara, 35,688	K16
Itami, 68,982	M11
Ito, 50,169	M15
Iwakuni, 90,607	G 4
Iwamizawa, 55,774	K14
Iwamura, 10,115	C 8
Iwanai, 25,444	C 8
Iwaya, 9,808	M11
Izuhara, 10,798	G 2
Izumo, 56,781	G 4
Kagoshima, 274,340	I 3
Kainan, 53,228	G 5, M13

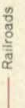
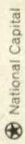
Kaizuka, 56,166	M11
Kajikazawa, 7,757	L14
Kakegawa, 37,301	M14
Kakogawa,* 71,517	G 5
Kamaishi, 81,006	E 8
Kamakura, 91,328	L15
Kameoka, 38,049	L11
Kamiooka,* 26,871	K13
Kanaiwa,* (part of	
Kanazawa)	F 6
Kanayama, 3,326	L13
Kanazawa, 277,283	F 6
Kanoya, 75,488	I 3
Kanuma,* 80,771	F 7
Karatsu, 76,899	H 2
Kasaoka,* 69,926	H 8
Kashima, 16,407	L16
Kashiwazaki, 59,275	F 7
Kasugai,* 53,311	L12
Kasukabe, 32,517	L15
Kasumi, 17,356	G 5
Katata, 16,757	L11
Katsuyama, 37,556	K12
Kawagoe, 104,612	L15
Kawaguchi, 130,599	L15
Kawasaki, 445,420 G 7,	L15
Kessennumi, 53,715	E 8
Kinomoto, 12,629	L12
Kinosaki, 5,922	G 5
Kiryū, 116,935	F 7, K15
Kisarazu,* 51,741	L15
Kishiwada, 107,640	
165,000	M11
Kitamaki, 5,223	K14
Kitami, 52,988	C 9
Kōbe, 979,305 G 5, M11	
Kōchi, 180,146	H 4
Kōfu, 154,494	G 7, L14
Koga, 40,206	K15
Kokura, 242,240	H 3
Komatsu, 72,378	F 6
Komatsushima, 32,013	G 5
Kominato, 12,591	L16
Kōriyama, 91,119	F 8
Kōro, 34,010	L13
Kōwa, 9,347	M12
Kuge	D 8
Kuji, 35,882	L15
Kuki, 22,082	K15
Kumagaya, 94,252	K15
Kumamoto, 332,493	H 3
Kumihama,* 14,340	L11
Kurashiki, 123,714	G 4
Kure, 199,304	G 4
Kurume, 138,804	H 3
Kusatsu, 31,853	L11
Kushiro, 119,536	C10
Kuwana, 58,899	L12
Kyōto, 1,204,084 G 5,	L11
Maebashi,	
171,265	F 7, K15
Maizuru, 92,839 G 5,	L11
Makurazaki, 35,546	I 3
Mamba, 6,635	K14
Marugame, 59,329	G 4
Matsuda, 57,883	G 3
Matsudo,* 68,363	L15
Matsue, 97,857	G 4
Matsuda, 24,136	K14
Matsumae, 20,072	D 8
Matsumoto,	
145,228	F 6, K13
Matsuyama, 213,457	H 4
Matsuzaka,	
93,573	G 6, M12
Matsuzaki, 8,576	M14
Mihara,* 70,650	G 4
Minamata, 46,233	H 3
Minato, 4,824	L15
Mino, 3,500	K16
Mino, 31,188	L12
Minokamo, 31,144	L12
Misaki, see Miura	
Misakubo, 10,947	L13
Mishima, 58,179 G 7,	L14
Mito, 110,435	L15
Mitake, 16,946	G 6, L13
Mito, 110,435	F 8, K16
Mito (Misaki), 36,538	L15
Miyako, 81,203	I 3
Miyakonojō, 140,782	I 3
Miyazu, 33,897	L11
Moeba, 34,189	L16
Moji, 145,027	H 3
Mombetsu, 37,388	B 9
Mori, 22,076	C 8
Moriguchi,* 68,204	M11
Morioka, 142,875	E 8

(Map Index) JAPAN

Moto, see Oshima					Shibata,* 68,146	E 7
Murakami, 33,014	E 7				Shibetsu, 15,000	
Muroran, 123,533	C 8				(39,191)*	B 9
Musashino,* 94,948	L15				Shimabara, 46,184	H 3
Nagahama,* 46,903	L12				Shimada, 51,238	M14
Nagano, 152,547	F 7				Shimizu, 126,586	G 7, L14
Nagaoka, 130,785	F 7				Shimo, 30,000	K15
Nagasaki, 303,724	H 2				Shimoda, 27,369	M14
Nagoya, 1,336,780	G 6, L12				Shimodate, 52,850	K16
Nakaminato,* 34,665	K16				Shimonoseki, 230,503	G 3
Nakamura, 40,086	H 4				Shimotsu,* 31,951	K15
Nakatsu,* 66,918	H 3				Shingū, 37,267	H 5
Nakatsu, see Ena					Shinjō, 38,603	E 8
Nakiri, 7,129	M12				Shinshiro, 35,560	M13
Nanao, 50,698	F 6				Shiogama, 50,960	E 8
Nara, 115,674	M11				Shiojiri, 13,863	K13
Nara, 5,505	L13				Shirotori,* 6,043	L12
Narita, 44,969	L16				Shishido, 11,018	K16
Nayoro, 33,339	B 9				Shizuoka,	
Neba	L13				295,172	G 7, M14
Nemuro, 24,659	C10				Shūzenji, 7,921	M14
Niigata, 261,758	H 4				Shōnobe, 15,734	L14
Niihama, 107,234	F 7				Suita,* 88,458	M11
Nijimahon	M15				Sumoto, 49,358	G 5
Niimi, 39,155	G 4				Sunagawa, 30,057	C 8
Nikko, 33,490	F 7				Suttsu, 10,794	C 8
Nirasaki, 31,698	L14				Suwa, 42,740	K14
Nishinomiya,*					Suzuka, 80,741	M12
210,179	M11				Tachikawa, 63,644	L15
Nishio,* 66,143	M13				Tagawa,* 100,071	H 3
Nobeoka, 116,762	H 3				Taguchi, 5,243	L13
Noboribetsu	C 8				Taira, 70,808	F 8
Nōgata,* 62,520	H 3				Tajimi, 47,405	G 6, L13
Noheji, 16,945	D 8				Takada, 17,432	F 7
Nozaki, 63,421	D 8				Takamatsu, 144,812	G 5
Numazu, 129,287	G 7, L14				Takaoka, 131,531	F 7
Ōami, 24,933	L16				Takasaki, 125,195	F 7, K15
Obama, 38,058	L11				Takata, 23,025	F 7
Obihiro, 70,027	C 9				Takato, 4,872	L14
Odawara, 113,099	G 7, L15				Takatsuki, 54,028	M 11
Ōfunato, 37,715	E 8				Takayama, 49,708	F 6, K13
Oga (Funakawa),					Takefu, 54,137	L12
48,563	E 7				Takahira, 4,364	M12
Ōgaki, 94,128	G 6, L12				Tamano, 62,365	G 4
Ōhara, 25,579	L16				Tanabe, 48,368	H 5
Ōita, 112,429	H 3				Tateyama, 59,416	G 7, M15
Okaya, 46,420	F 7, K14				Teshio, 10,019	B 8
Okayama, 235,754	G 4				Toba, 30,121	M12
Okazaki, 155,902	M13				Tobata,* 97,214	H 3
Omigawa, 23,715	L16				Tochigi, 67,924	F 7, K15
Ominato, 14,861	D 8				Tokushima, 171,419	G 5
Ōmiya, 144,540	G 7, L15				Tokuyama, 70,987	G 3
Ōmura,* 61,230	H 3				Tōkyō, 6,969,104	
Ōmuta, 201,737	H 3				(*10,350,000)	G 7, L15
Ōno, 44,185	L12				Tomakomai, 51,319	C 8
Onoda,* 54,627	H 3				Toride, 21,233	L16
Onomichi, 84,882	G 4				Tottori, 104,880	G 5
Ōsaka, 2,547,316					Toyama, 170,495	F 6
(*5,300,000)	G 5, M11				Toyohashi,	
Osaka, 6,477	L13				202,985	G 6, M13
Oshamambe, 14,667	C 8				Toyokawa,* 61,359	M13
Oshima (Moto), 12,434	M15				Toyonaka, 127,678	M11
Ōtaki, 18,379	L16				Tsu, 106,754	G 6, M12
Ōtari, 188,448	C 8				Tsuchiura, 72,023	F 8, K16
Ōtsu, 107,498	M11				Surikake, 7,555	C 7
Ōzu, 46,816	H 4				Tsuruga, 51,197	G 6, L12
Piuka, 13,876	B 9				Tsuruoka, 85,041	E 8
Pombetsu, 17,507	C 9				Tsushima, 38,672	L12
Rumoe, 35,797	C 8				Tsuyama, 80,883	G 4
Ryōzō,* 30,048	E 7				Ube, 160,020	G 7
Saeki, 51,226	H 3				Ueda, 51,572	F 7, K14
Saga, 126,432	H 3				Ueno, 62,355	M12
Sagamihara,* 83,841	L15				Ujiyama,	
Sagara, 29,596	M14				97,223	G 6, M12
Saigō, 16,199	F 4				Ukusu, 3,417	M14
Saijō,* 88,241	G 4				Urawa,* 55,993	C 9
Sakai, 251,793	M11				Urawa,* 143,044	G 7, L15
Sakashita, 6,376	L13				Utsunomiya, 227,153	F 7
Sakata, 96,735	E 7				Uwajima, 66,154	H 4
Sanda, 8,005	F 7				Wajima, 34,052	F 6
Sanjō, 68,570	K15				Wakamatsu (Fukuoka	
Sano,* 69,412	C 8				pref.),* 97,310	H 3
Sapporo, 426,620	B 9				Wakamatsu (Fukushima	
Sarufutsu	B 9				pref.),* 97,885	F 7
Sasebo, 258,221	H 2				Wakayama,	
Seki, 8,554	M12				220,021	G 5, M11
Sendai (Kagoshima					Wakkanai, 44,751	B 8
pref.), 49,106	I 3				Yagi, 8,372	M11
Sendai (Miyagi pref.),					Yaiyu, 67,229	M14
375,844	E 8				Yamagata, 160,245	E 8
Senhōshi, 3,403	B 8				Yamaguchi, 81,177	G 3
Senzu	L14				Yao,* 95,925	M13
Setana, 6,023	C 7				Yatsushiro, 90,303	H 3
Seto, 64,681	G 6, L13				Yatata, 286,241	
Shari, 17,468	C10				(*1,100,000)	H 3
					Yawatahama, 55,471	H 4
					Yoichi, 28,591	C 8



JAPAN



1 inch = 102 Statute Miles

Miles 0 10 20 40 60 80 100

Lambert Conformal Conic Projection



Japan (Map Index)

Yokkaichi, 170,602..... G 6, M12
Yokohama, 1,143,687..... G 7, L15
Yokoshiba, 13,455..... L16
Yokosuka, 279,132..... G 7, L15

Yokosuka, 8,211..... M13
Yokote, 42,736..... E 8
Yonago, 90,024..... G 4
Yonezawa, 95,714..... E 8
Yoshiwara, 73,473..... L14
Yūbari, 30,000 (107,332*)..... C 8

Physical Features

Akaishi-Sammyaku (Mts.)..... L14
Akuseki (Isl.)..... J 2
Amakusa Sea..... H 2
Amami (Isl.)..... J 2
Ariake Bay..... I 3
Asahi-Dake (Peak)..... C 9
Ashibetsu-Dake (Peak)..... C 9
Atsukeshi Bay..... C10
Atsumi Bay..... M13
Awa (Isl.)..... E 7
Awaji (Isl.)..... G 5
Biwa (Lake)..... L12
Bungo Strait..... H 4
Cape Ashizuri..... H 4
Cape Daio..... G 6
Cape Erimo..... D 9
Cape Esan..... D 8
Cape Hajiki..... E 7
Cape Inubō..... G 8

Cape Irō..... G 7
Cape Kyōga..... G 5
Cape Muroto..... H 5
Cape Nojima..... G 7
Cape Noma..... I 2
Cape Omae..... M14
Cape Shakotan..... C 8
Cape Shio..... H 5
Cape Shioya..... F 8
Cape Shiretoko..... B10
Cape Shiriya..... D 8
Cape Sōya..... B 8
Cape Suzu..... F 6
Cape Todoga..... E 9
Cape Toi..... I 3
Chokai-San (Peak)..... E 8
Danjo (Isl.)..... H 2
Ena-San (Peak)..... L13
Fuji, Mt..... G 7
Ganju-San (Peak)..... E 8
Gotō Is..... H 2

Haku-San (Peak)..... K12
Hakken San (Peak)..... G 5
Hayachine-San (Peak)..... E 8
Hekura (Isl.)..... F 6
Higashi (Dōgo) (Isl.)..... F 4
Hirado (Isl.)..... H 2
Hokkaidō (Isl.)..... C 7
Honshū (Isl.)..... F 5
Iide-San (Peak)..... F 7
Iki (Isl.)..... H 2
Japan, Sea of..... D 4
Kagoshima Bay..... I 3
Kakaiga (Isl.)..... J 3
Kami (Isl.)..... G 2
Kamuri-Yama (Peak)..... G 4
Kamuri-Yama (Peak)..... L12
Kariba-Yama (Peak)..... C 7
Kasatori-Yama (Peak)..... H 4
Kasumiga-Ura (Bay)..... F 8
Kii Strait..... G 5
Kinpoku (Peak)..... E 7
Kiso-Sammyaku (Mts.)..... L13
Ko (Isl.)..... D 7
Korea Strait..... H 2
Koshiki (Isl.)..... I 2
Kōzu (Isl.)..... G 7
Kuchino (Isl.)..... I 2
Kuchino Erabu (Isl.)..... I 2
Kuju-San (Peak)..... H 3
Kunimi-Dake (Peak)..... H 3
Kuro (Isl.)..... I 2
Kusakaki (Isl.)..... I 2

Kyuroku (Isl.)..... D 7
Kyūshū (Isl.)..... H 3
Mi (Isl.)..... G 3
Mikura (Isl.)..... H 7
Miyake (Isl.)..... G 7
Mount Fuji..... G 7
Mutsu Bay..... D 8
Nakano (Isl.)..... J 2
Nanatsu (Isl.)..... F 6
Nasu-Dake (Peak)..... F 7
Nemuro Strait..... B10
Nii (Isl.)..... G 7
Norikura-Dake (Peak)..... K13
Noto (Isl.)..... F 6
Noto Peninsula..... F 6
Oga Peninsula..... E 7
Oki Is..... F 4
Okushiri (Isl.)..... C 7
Ontake-San (Peak)..... L13
Ōsaka Bay..... M11
Ōshima (Isl.)..... G 7
Osumi Is..... I 3
Osumi (Van Diemen) Strait..... I 3
Otaru Bay..... C 8
Poroshiri-Dake (Peak)..... C 9
Rausu-Dake (Peak)..... B10
Rebun (Isl.)..... B 8
Rishiri (Isl.)..... B 8
Sado (Isl.)..... E 7
Sendai Bay..... E 8
Shikoku (Isl.)..... H 4

Shimo (Isl.)..... H 3
Shimo (Isl.)..... G 2
Sōya Strait..... B 8
Suo Sea..... H 3
Suruga Bay..... M14
Suwanose (Isl.)..... J 2
Suzuka-Sammyaku (Mts.)..... M12
Take (Isl.)..... F 3
Tanega (Isl.)..... I 3
Tanega Strait..... I 3
To (Isl.)..... G 7
Tobi (Isl.)..... E 7
Tokara Is..... J 2
Tokara (Isl.)..... J 2
Tokara Strait..... I 3
Tōkyō Bay..... L15
Tōtōmi Sea..... M13
Towada (Lake)..... D 8
Toyama Bay..... F 6
Tsugaru Strait..... D 8
Tsuguri-San (Peak)..... H 5
Tsu-Shima (Is.)..... G 2
Tsushima Strait..... H 2
Uchiura Bay..... C 8
Uji (Isl.)..... I 2
Wakasa Bay..... G 5
Yaku (Isl.)..... I 3
Yangeshiri Teure (Isl.)..... B 8
Yariga-Take (Peak)..... F 6
Yatsuga-Take (Peak)..... G 7
Yatsushiro Sea..... I 2
Yokoate (Isl.)..... J 2

Source: Latest available official figures * Population of metropolitan area, including suburbs.
▲ Population of entire municipality, including rural area. * Place names marked by an asterisk do not appear on the map. Key shows general location.

In the winter, great schools of fishes from the Sea of Okhotsk, off Siberia, travel south to the warm waters of Japan. In the summer, fishes from the south come to the coasts. Fish is one of the most important foods in the Japanese diet. The Japanese also harvest large amounts of seaweed for food and fertilizer.

Japan has many mineral resources, but not enough for its industrial needs. Only coal, copper, gold, silver, and sulfur are present in important quantities. There is only a little petroleum. The lead, zinc, salt, and iron that Japan mines are not enough for its needs. Japan has a fair amount of coal. It is mostly soft coal of medium quality. About one third of it is in Kyushu, and one half in Hokkaido. Special coking coals for industrial use must be imported. Japan has a little natural gas, nickel, aluminum, uranium, and magnesium.

Climate in Japan is influenced by the ocean currents which flow near it and by the winds that blow over it. Two great ocean currents pass the Japanese coast. The Japan Current, which the Japanese call the *Kuroshio*, or *Black Current*, starts north of the Philippines and flows northward along the south and east coasts of Japan. It is a warm current and makes southern Japan warmer than places in the same latitudes on the mainland of Asia. East of Japan, the Japan Current meets the Kuril Current, which flows south from the cold waters of the Sea of Okhotsk and the Bering Sea. The Japanese call this the *Oyashio*, or *Great Current*.

The winds of Japan follow the pattern of the Asiatic monsoon, a constant seasonal wind (see **MONSOON**). Japan is also in the path of typhoons, the great windstorms that start in the west-central Pacific. See **TYPHOON**.

January temperatures in Japan average 20°F. in the northern part and 40°F. in the southern part. July temperatures range from 60°F. in the north to 80°F. in the south. About 40-60 inches of rain fall annually in the northern part, with 80 inches in the south.

Conservation. The Japanese have done much to protect their forests, and to control floods. They have planted forests on unprotected areas to keep valuable

soil from washing away. Timber-cutting is regulated, and new trees must be planted when others are cut down. Japan has no large irrigation projects, but farmers operate many small community irrigation systems.

Hydroelectric Power comes from Japan's many swift streams. Their fast-flowing current and many waterfalls supply much of the country's electric power. Some railroads run on electric power, and electric interurban cars travel between cities. Sakuma Dam, built near Nagoya in 1956, provides some of the power for Tokyo and Osaka. The Ogochi Dam, Japan's largest, was completed in 1957. It is located outside of Tokyo.

The People and Their Work

The People. The ancestors of the modern Japanese came from many places. One of the first peoples of Japan were the Ainu. These Caucasoid people were slowly pushed northward as other groups came to the islands. Today, most Ainu live on Hokkaido, and there are only about 16,000 of them. See **AINU**.

The rest of the Japanese are descendants of people who came to the islands in later times. Many came from the mainland of Asia, passing through northern China and Korea. Others came from southern China, the Philippines, and the South Pacific. The Japanese are a mixture of Mongol, Malay, and a few Ainu. They resemble the Chinese, with yellowish skin, dark eyes, prominent cheekbones, and straight black hair. They tend to be short and stocky, and their legs are usually short in proportion to their bodies.

Some scientists believe that the way the Japanese live and the food they eat have had great influence on their body structure. They believe that the Japanese are short because of their diet. The Japanese who are born and live abroad and eat Western food generally grow taller than the Japanese who live in Japan.

Ways of Life in Japan are different in many ways from those in America and Europe. The Japanese have

Bernd Lohse, Rapho-Guillumette

Photography is one of the most popular hobbies in Japan. Camera fans may spend hours arranging a beautiful setting for a single picture.



FAMILY LIFE

At Dinner, a Japanese family kneels on cushions around a low table. The members of the family eat rice and other foods with chopsticks. They drink tea from cups without handles.



Arranging Flowers, these girls learn one of the traditional family arts of Japan.



Japan Travel Bureau

Playing Cards, a whole family enjoys the game of *Karuta*. Each card has a poem written on it. As the woman reads a card, the players rush to pick it up.

taken over many Western ideas and inventions, but they still keep many of the customs of their great grandfathers.

The Japanese are extremely polite, and run their lives according to strict rules of etiquette, or manners. They love to make ceremonies out of many simple tasks. As children, the Japanese are taught to control their feelings.

Japanese women always have been shy and retiring in their actions. They have now been given equal rights with men. But, for many years, they were taught that men were superior to women. They had to be quiet and obedient. Girls had to obey their fathers. When they married, their husbands became their masters. If their husbands died, women were supposed to obey their oldest sons. According to Japanese custom, most women could not appear in public places of entertainment. Men could go to dance halls and night clubs only with *geishas*, (pronounced *GAY shuz*), young women who are

hired as singers or dancers to supply entertainment.

The Japanese are great lovers of beauty, particularly in nature. They are fond of their gardens, and often take tours to see flowers and trees. The Japanese greatly admire courage. During World War II, Japanese soldiers became famous for their personal bravery. Part of this bravery comes from the rules of honor that the Japanese people believe in. All Japanese are taught that death is better than disgrace. Many Japanese have killed themselves if they felt they had disgraced themselves or their families.

The Japanese people work hard, whether they are farmers, factory workers, or shopworkers. About half the workers are farmers. The others work at other jobs in villages, towns, and cities. On the farms, men, women, and even children just old enough to walk, do the work in the rice fields. In the cities, the entire family helps earn the family's living. Many persons work in factories, but other workers make manufactured

THE YOUNGER GENERATION

Cowboy Suits for children and Western fashions for women are popular in large cities.



During the Lotus Festival, children wear paper hats and paint their faces.

goods in small industries carried on in the homes.

Clothing. The traditional Japanese clothing is the *kimono*. This is a long, loose robe of cotton or silk, tied about the waist with a sash called an *obi*. Girls and young women usually wear kimonos of bright colors covered with flower designs or traditional prints. Older women often wear gray, brown, or black kimonos. Boys in summer sometimes wear light checkered kimonos, but most Japanese boys today wear Western-style clothing.

School children often wear a sort of uniform. The girls wear blue skirts and middie blouses, and the boys wear dark blue suits. Farmers and poorer workers in the city often wear tight cotton pants and short jackets. In the city, the men usually wear Western-style suits at work and on the street, but they generally change into brown or black kimonos when they relax at home.

During the 1920's, many Japanese women started to wear dresses, but the style did not become popular until after World War II. Then the women began wearing dresses, because they were less expensive and easier to care for. Japanese men and women seldom wear hats. Students and the military wear uniform caps. Most men in cities wear leather shoes. But both men and women may wear *geta*, wooden sandals built on a pair of two- or three-inch high blocks, or *zori*, flat sandals made of wood or woven straw. In their houses, they usually go barefoot or wear only stockings. Sometimes they wear *tabi*, a sort of split-toed sock.

Shelter. In the large cities, there are steel and concrete public buildings, offices, and stores. But most of the people still live in the older types of Japanese one-story houses. These houses usually are small, with one or two rooms. The Japanese use sliding paper screens for doors and windows. The rooms have straw mats covering the wooden floors. The Japanese take off their shoes when they enter a house, so as not to damage or soil the mats. Usually the only furniture in a room is a low table. People sit on cushions on the floor. Heavy quilts spread out on the floor serve as beds at night. The quilts are stored in closets during the day. The only heat comes from a few sticks of charcoal in a large earthenware pot,



Bernd Lohse, Rapho-Guillumette; Horace Bristol; Japan Travel Bureau

On Girls' Day, March 3, a girl invites all her friends to see her dolls and doll furniture arranged on special platforms.

called a *hibachi*. Cooking is done over charcoal or on gas stoves. In large homes, the main living rooms overlook the garden in the back. Most rooms have a nook in one wall called the *tokonoma*. A scroll or print hangs there, with a flower arrangement placed in front of it.

Food. Japanese meals usually are simple. Rice is the most important part of every meal. Most Japanese eat three or four bowls of rice at a meal. Besides rice, the Japanese eat large quantities of fresh and salted fish. They often eat the fish raw. The Japanese often pickle their green vegetables. Soybean curd and seaweed make up an important part of their diet. They eat only a little meat. The Japanese take great interest in how their food looks. They serve meals on beautiful lacquered trays, with the food carefully arranged in many small, attractive bowls. Each bowl contains just one kind of food, so as to emphasize its color, texture, and design. Many Japanese eat their meals with chopsticks.

Recreation. Japan is a beautiful country, and the Japa-



Ewing Galloway

Harvesting Tea Leaves, women wear heavy clothes to protect themselves from the sun. Tea is a valuable crop in Japan.

Threshing Rice, a Japanese farmer uses a simple foot-powered machine to knock the rice grains out of dried bundles of rice stalks. The stalks are hung on long poles to dry in the sun.



nese like to take vacation trips to see it. More than one third of all forests are government-owned and these are free for tourists to visit. Many Japanese visit great religious shrines such as the ones at Nara, Nikko, Kamakura, and Ise. They also like to climb Mount Fuji.

The most popular places for recreation for many Japanese are the theater and the public baths. The Japanese like to bathe every day. Many poorer persons take their baths at public bathhouses, which are almost like neighborhood clubhouses. The Japanese enjoy both Western and Japanese sports. Soccer, rugby, baseball, and swimming have been popular for many years. *Judo*, or *jujitsu*, a form of self-defense, is popular with schoolboys. *Sumo*, a type of wrestling, is as popular in Japan as boxing is in the United States. See CHRISTMAS (Asia).

Cities. Tokyo is the capital of Japan and one of the world's largest cities. For many years, Yokohama served as the country's chief port. However, Kobe and Tokyo have enlarged their harbors and taken over much of Yokohama's shipping. Atomic bombs were dropped on Hiroshima and Nagasaki during World War II. See the separate articles on Japanese cities listed in the *Related Articles* section of this article.

Agriculture is the most important occupation in Japan. More than half the Japanese are farmers or farm workers. Farm land is scarce, and the farms are small. The average farm covers about two and a half acres.

More than half of all Japan's farm land is used for growing rice. The country grows about four fifths of the rice it needs. Rice is grown in *paddies*, or flooded fields with dirt walls or dikes around them. Farmers build their paddies in terraces down the sides of hills, to allow water from nearby streams to flow down from field to field. Except in the southernmost part of Japan, only one crop of rice can be grown each year.

Other main crops include wheat, barley, and soybeans. Farmers also grow some potatoes and radishes. Only about one half acre out of every 100 acres is used for growing tea. But this small amount of land is enough to grow tea for Japan's needs and for a large export trade. Tea grows well on the hillsides of southern Japan.

Many Japanese farmers raise silkworms as an extra

source of money. With a few mulberry trees, they can raise silkworms at home. When the silkworms have made their cocoons, the farmers sell the cocoons to dealers in the towns, who send them on to silk mills.

Japan has little livestock. Land is too scarce to be used for grazing, and other food for animals is too expensive. In central and southern Japan, the only farm animals to be seen are a few chickens. Farmers in Hokkaido raise herds of cattle where there is room for grazing.

The Japanese farmer must work hard. In the spring, he grows a garden and plants his rice crop. He must fertilize the fields constantly, because the soil is old and worn out. He starts the rice plants in seed beds, and must transplant them when they have grown about a foot high. The farmer may plant some of his rice several weeks after the first planting, so it does not all have to be harvested at the same time. The farmer must do all this by hand. His fields are too small for machinery. Even if his farm were bigger, the average farmer could not afford to buy machinery. The farmer in the southern part of the country may plant a second rice crop late in the summer. In the fall, he harvests the spring rice. Throughout the year, the farmer also tends his silkworms. The average farm family earns only a few hundred dollars a year.

Fishing Industry. Fishing is second only to agriculture as Japan's most important food industry. About 1,500,000 persons make a living by fishing. Next to rice, fish is the main food of most Japanese. Japanese fishing boats sail to almost all parts of the Pacific. The fishermen catch salmon off Alaska and hunt for whales in the Arctic and Antarctic oceans. The Japanese export frozen, dried, and canned fish to other countries. They also export crab meat, lobster, and cultured pearls.

Manufactures in Japan are centered in four main areas along the southern coast of Honshu and around the Inland Sea. The most important area lies around Osaka, Kobe, and Kyoto, where Japan's largest industry, cotton textile manufacture, is located. Osaka and Kobe also are important shipbuilding centers. The country leads the world in the production of ships. The

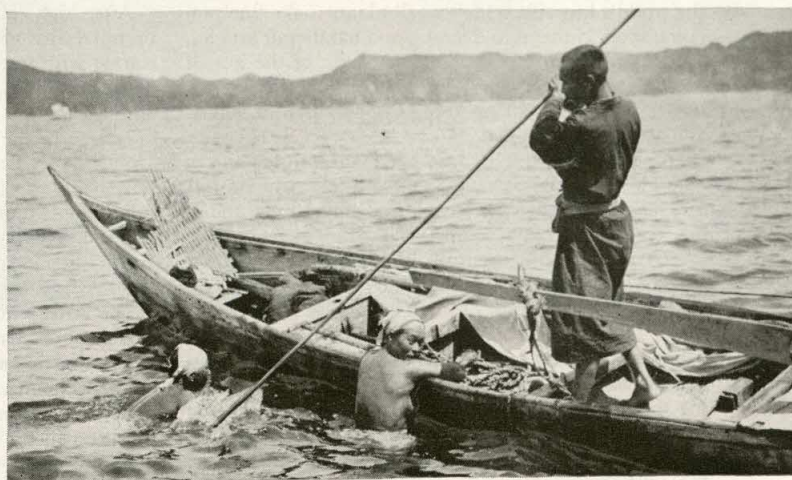


JAPAN AT WORK

New and Old. Near the entrance of a large cement plant stands a small Shinto shrine where the workers may pause to worship their ancient gods.

Bernd Lohse, Rapho-Guillumette; Burton Holmes, Ewing Galloway; Horace Bristol

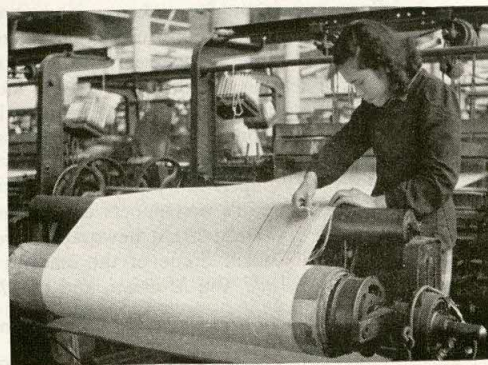
Women Pearl Divers gather oysters from the bottom of the sea at a pearl-culture farm off the coast of Japan. Three or four divers can bring up 1,000 pearl-bearing oysters a day from a depth of about 60 feet.



A Factory Worker assembles flashlight bulbs and Christmas tree lights in a small plant in Tokyo. Mothers often take their children to work with them at the plant while they work.



To Make Steel Ingots, molten metal is poured into molds. Most of the raw materials for Japan's heavy industries must be imported.



Weaving Silk, a woman untangles threads and ties new ones at a break in the weave on her loom.

JAPAN

northern coast of Kyushu is the center of Japan's heavy industry, and produces about three fourths of the country's pig iron. Steel mills, cement plants, shipyards, glass works, and other basic industries are concentrated in this area. Yawata is the main steel center, because it is near the coal fields of northern Kyushu and the importing centers for coking coal. Printing and publishing are also important industries.

Japan's most important manufactures include textiles, iron and steel products, machinery, chemicals, and electrical goods. Japan produces about nine tenths of the world's raw silk. Many small plants make fine precision tools, cameras and lenses, and handicraft articles.

Mining. Japan mines about one sixth of the iron it needs. The country mines large quantities of soft coal, but must import coking coal. Copper, pyrites, silver, and zinc also are mined.

Transportation. Japan has some roads, but few trucks or automobiles. Buses have become widely popular. But most roads are not well paved, and travel by automobile is difficult. The country has a large network of narrow-gauge railroads. Rail lines connect all the important Japanese cities. There are more than 18,600 miles of railroads, most of them owned by the Government. The railroads operate with great efficiency. Most Japanese travel by train, but they ship freight and baggage by water. In 1958, Japan opened a tunnel connecting the islands of Honshu and Kyushu. The tunnel is the second longest underwater tunnel in the world.

Trade. Japan is not a self-supporting nation. To live, the Japanese people must import food and raw materials from abroad. In order to pay for these goods, Japan must ship and sell abroad products that it grows or manufactures. The country does not grow enough rice or wheat to feed all its own people. It produces no cotton and only a little wool. Japan needs many other raw materials. Its exports include silk, cotton, and rayon textiles, fish and other sea products, and many inexpensive manufactured articles.

Tourist Industry. Thousands of tourists visit Japan each year. Many persons consider it one of the most beautiful countries in the world. The money that tourists spend in Japan helps to pay for goods the Japanese have to buy abroad. Tourists are especially interested in the beautiful temples of Nara and Nikko, world-famous Mount Fuji, and Japan's many hot springs and resorts. There are many Western-style hotels.

Communication. Japan has a modern communication system. All the main cities and towns have telephones, and there is a widespread telegraph and radio system. There is a growing television network. The Government owns many radio broadcasting stations, and many are controlled by private owners. Japan has an efficient postal service.

Many newspapers are published in the large Japanese cities. Japan's newspapers enjoy freedom of the press. The most important newspapers are printed in Tokyo and Osaka. Some of the leading newspapers include the *Asahi*, the *Mainichi*, and the *Yomiuri*.

Social and Cultural Achievements

Education. All Japanese children are required to attend school for at least nine years. This education is

free. After six years of elementary school and three years of junior high school, children may attend senior high school for three years. More than 11,000,000 students each year attend Japan's 21,000 primary schools. The 12,000 junior high schools provide education for more than 5,000,000 Japanese children. But there are only about 2,000 senior high schools, with about 2,300,000 students.

The elementary school student spends most of his time learning to read and write. This is more difficult for the Japanese than for the American student, because the Japanese language is extremely complicated and difficult. Most Japanese can read and write.

After high school, students may go on to a college or university. Some of Japan's higher schools were started with foreign funds and had foreign teachers at first. Doshisha University in Kyoto was built by Americans and is the oldest Christian school in continuous operation in the Far East. The British built St. Paul's University in Tokyo. The government owns the largest universities, called National Universities. The most important of these are located in Tokyo, Kyoto, Tohoku, Kyushu, Hokkaido, Osaka, and Nagoya. Altogether, Japan has 220 colleges and universities, more than any other Asiatic country.

The Arts. The Japanese are great lovers of beauty. This love of beauty is expressed in poetry and drama, in painting and sculpture, and in making porcelain ware and handicrafts. Much of Japan's earliest art was patterned after Chinese art. After Japan's first contact with the West in the 1500's, Japanese arts began to be influenced by Western arts. But in the thousand years between Chinese influence and Western influence, Japanese arts developed along their own lines.

Some of the best Japanese art appears in the beautiful workmanship of ivory and wood carvings, lacquer ware, figures cast in bronze, and other metalwork. For a history of Japanese color prints, see JAPANESE PRINT.

Traditional Japanese music may sound tuneless to Western ears. The usual instruments are gongs, drums, and the *samisen*, which is a form of banjo. Today many Japanese enjoy the same classical and popular music that is heard in Western countries. Tokyo has a symphony orchestra.

The Japanese originated a type of puppet play, *Bunraku*, in which unusually large puppets are used. Japanese film studios produce many fine motion pictures. For the history of the literature and drama of Japan, see JAPANESE LITERATURE.

Religion. For hundreds of years, the most important religious force in Japan has been Shinto—the Way of the Gods. But four other religions have influenced Japanese life and thought—Buddhism, Confucianism, Taoism, and Christianity.

Shintoism is the original Japanese religion. It began in early times when the people worshiped the spirits of nature. The people believed that animals, trees, rivers, and waterfalls contained the spirits of gods, and they set up shrines to honor these spirits. The Japanese also worshiped their ancestors, and Shintoism grew to include ancestor worship. For many Japanese, Shintoism was simply a patriotic way of life, and not a religion. But Shinto worship was compulsory in all schools before World War II. At the end of the war, Shintoism was abolished as a state religion, and schools were ordered to

Modern Buildings combine traditional Japanese architecture with Western styles. This department store in Osaka has deep ridges running the full height of the building to shade its narrow windows from the heat of the summer sun.



Deane Dickason, Ewing Galloway

stop teaching it. Emperor Hirohito denied that he was divine or that the Japanese people were of divine origin. Shintoism still is practiced in a form called *sect shinto*, in which the worship centers about the teachings of a leader, or of a certain group. See SHINTOISTS.

Buddhism is the most important religion in Japan. Many Japanese have practiced both Buddhism and Shintoism. They did this in the belief that Buddhism was a religion, but that Shintoism was only a form of patriotism. Buddhism came to Japan from Korea and China as early as A.D. 552. Among the Buddhist sects in Japan are *Zen*, *Jodo*, *Shin*, and *Nichiren*. There are more than 100,000 Buddhist temples and shrines in Japan. There is a famous giant statue of Buddha, called the *Daibutsu*, in the shrine at Kamakura. See BUDDHISTS.

Confucianism and **Taoism** also were brought to Japan from China, but neither became strong as a religion. Iyeyasu, who was *shogun*, or ruling feudal lord, from 1603 to 1616, had the works of Confucius printed, and they became popular. See CONFUCIUS; TAOISTS.

Christianity. Portuguese missionaries first brought Christianity to Japan in the 1500's. The religion became popular in southern Japan at that time. Christianity was one of the foreign influences that was forbidden when the Government ordered all the foreigners to leave Japan and all foreign influence wiped out in 1637. Thousands of Christians were killed. But some Christians continued practicing their religion secretly. When religious freedom was restored in the 1870's, several thousand Japanese were found who had been faithful to Christian beliefs. Foreign missionaries were allowed to come to Japan to spread the religion. There are more than 2,000 Christian churches in Japan.

Government

National Government. Political power is centered in Japan's Diet, or parliament, which is made up of two

houses. The House of Representatives has 467 members elected for four-year terms. Half of the members of the House of Councillors are elected every three years for six-year terms. Elections are held at large for 100 members, and the other 150 are elected from prefectures. The Diet elects one of its members as prime minister. He selects the members of his cabinet. A majority of the cabinet ministers must be members of the Diet.

The emperor has many ceremonial duties and functions, but no real power. Japan's constitution, written in 1946, states that sovereignty belongs to the people, and not to the Government. The prime minister and his cabinet are responsible to the Diet.

Men and women over twenty years of age are eligible to vote in parliamentary and local elections.

Local Government. Japan is divided into prefectures, which are like American states, for local government. Each prefecture has its own governor and assembly elected by the voters. The prefectures are divided into municipalities, towns, and villages, and each smaller unit elects its own officials.

Political Parties. The major parties in Japan are the Liberal Democratic and the Socialist. The Communists have lost popularity steadily since the end of World War II.

History

Early Days. No one knows much about the early history of Japan. The only history of early times is in the *Kojiki*, or *Record of Ancient Things*, which was published in A.D. 712. It tells how the Sun Goddess founded the islands of Japan. Supposedly, one of her descendants, Jimmu Tenno (711-585 B.C.), became the first emperor of Japan in 660 B.C. Few Japanese or Western historians believe that the stories in the *Kojiki* are true. These stories were told by people who could not write.

Historians know that warriors from Japan invaded



Japan Travel Bureau

The Ainu have lived in Japan for many hundreds of years. Unlike most Japanese, the Ainu grow heavy beards.

Korea sometime during the A.D. 300's or 400's, and ruled the country until 663. The first Chinese Buddhist priest came to Japan in 552. The Buddhists brought with them a written language, as well as Chinese arts and crafts. Prince Shotoku, who was regent of Japan from 593 to 621, encouraged the Japanese to take up Chinese culture. He often is called "the founder of Japanese civilization."

The Shoguns. In 794, Emperor Kammu set up his capital at Kyoto, which remained Japan's capital until 1867. But the emperor actually had little power and authority. For nearly 1,100 years, different families of feudal lords were the actual rulers of Japan. Sometimes one family ruled the whole country. At other times, two or three families ruled various parts of the country.

RED-LETTER DATES IN JAPAN

- 660 B.C. According to myth, Jimmu Tenno became emperor of Japan.
- A.D. 552 The first Chinese Buddhist priest came to Japan.
- 794 Emperor Kammu set up his capital at Kyoto.
- 1192 Feudal lords called *shoguns* ruled Japan.
- 1542 The first Europeans came to Japan.
- 1592 and 1598 Japan invaded Korea.
- 1603 The Tokugawa family of shoguns seized the Government.
- 1637 The Government forced all foreigners out of Japan.
- 1854 Commodore Matthew C. Perry of the United States visited Japan and reopened the country to foreigners.
- 1868 Emperor Mutsuhito regained his power from the shogun.
- 1894-1895 Japan went to war with China and took Formosa.
- 1904-1905 Japan defeated Russia in the Russo-Japanese War.
- 1910 Japan annexed Korea.
- 1914-1918 Japan joined the Allies in World War I.
- 1931 Japan invaded the Chinese province of Manchuria.
- 1937 Japan invaded central China from Manchuria.
- 1941-1945 World War II, in which Japan lost all its overseas territory.
- 1947 Japan's democratic constitution came into force.
- 1952 Japan signed a peace treaty with the Western Allies, ending the postwar military occupation of the country.
- 1955 Japan began operations in its first atomic research laboratory, located in Tokyo.
- 1958 Japan, Great Britain, and the United States agreed to cooperate in peaceful uses of atomic energy.

The first family to take control of the country was the Fujiwara clan. Members of the Fujiwara family ran the Government, while the emperor spent his time in various Shinto ceremonies. In 1185, Yoritomo, a member of the Minamoto family, defeated the Taira family, who had taken power from the Fujiwaras. Yoritomo set up his *Bakufu*, or military government, at Kamakura, near Tokyo Bay. In 1192, the emperor gave him the title of *shogun*, which means *great general*, and he ruled Japan in the name of the emperor. Yoritomo's sons were weak, and the Hojo family soon seized power from them and became the actual rulers.

In 1274, Kublai Khan, the Mongol conqueror, sent a great fleet of ships to invade Japan. A typhoon hit his fleet and destroyed it. The Japanese called this typhoon *Kamikaze*, or *Divine Wind*. Kublai Khan tried to invade Japan again in 1281, but failed.

The Ashikaga family took control of Japan in 1338 and ruled the country for almost 250 years. Civil war ended their rule. A great warrior, Hideyoshi Toyotomi, became regent in 1582 and controlled the country until his death in 1598. Hideyoshi often is called "the Napoleon of Japan." In 1592 and 1598, Hideyoshi invaded Korea. He planned to build an empire that would include China and India, but his armies got only as far as Korea. The Japanese armies withdrew after Hideyoshi died, and the warrior Iyeyasu took control of the Government. His family, the Tokugawa, ruled the country as shoguns until the emperor's power was restored under Mutsuhito in 1868.

Foreign Relations. Europeans first heard of Japan from Marco Polo, a Venetian traveler of the late 1200's. He returned to Europe from China with tales of a place he called *Cipango*, a land of gold and riches. Later explorers tried to reach this land. Columbus was hoping to reach Japan or the East Indies when he sailed west from Europe in 1492. In 1542, Portuguese sailors were the first Europeans to reach the islands. A Spanish Jesuit priest, Saint Francis Xavier, came to Kagoshima, in southern Kyushu, in 1549. He began to preach the Roman Catholic religion. The Japanese welcomed him and he made many converts. Other missionaries from Spain and Portugal followed him, and traders came with them. In the early 1600's, they were joined by traders from Holland and England.

At first, Japanese nobles and officials welcomed the foreigners. But Japan's rulers became suspicious within a few years. They feared that the missionaries and traders might soon bring with them European armies to conquer the islands. Gradually, the Japanese put down the Christian movement. In 1614, Iyeyasu ordered all Christian priests to leave Japan. He also ordered all Japanese to give up Christianity.

In 1637, several thousand Japanese Christians were massacred at Shimabara. The Japanese forced all foreign traders except the Dutch to leave the country. Japan became a "hermit" country, cut off from the rest of the world. One Dutch ship was allowed to come to Nagasaki each year. But the Japanese were not allowed to leave the country. Some foreign sailors who had been shipwrecked on Japan's shores were killed.

The United States government became concerned when the Japanese mistreated some American sailors who had been shipwrecked there. In 1853, Commodore Matthew C. Perry was sent to Japan with four war-

ships. His orders were to open diplomatic relations between Japan and the United States, and to secure fair treatment of American traders and sailors. The Japanese government resisted Perry's demands.

Perry returned with more "black ships" in 1854 and anchored them in Tokyo Bay near Edo, the old name for Tokyo. The weak Japanese government of the Tokugawa family unwillingly agreed to sign a treaty with the United States. The first American consul general, Townsend Harris, opened Nagasaki, Yokohama, and two other ports to American trade in 1857. Great Britain, France, Russia, The Netherlands, and other countries also made treaties with Japan.

Restoration of the Emperor. Many Japanese resented the government's actions in giving new privileges to foreign interests. They blamed the shogun, head of the Tokugawa family, for allowing foreigners to enter Japan once more. A group of *daimios*, or feudal lords, from western Japan allied themselves with the emperor. They convinced him that he should take power from the shogun. The nobles forced the shogun to resign, and in early 1868 Emperor Mutsuhito announced that he had taken his traditional powers back from the shogun. The Tokugawa armies which resisted this movement were easily defeated. The emperor moved his capital to Edo (or Yedo), which he renamed Tokyo, or Eastern Capital. He issued a Charter Oath in which he promised reforms in the government.

The members of Mutsuhito's court worked to modernize Japan. Within a few years, they got rid of the feudal system and the *samurai*, or warrior class, and set up a modern army and navy. They made education compulsory. They promoted all phases of Japan's economy, including manufacturing, mining, transportation, and banking. They invited many European and American experts to teach Western methods to the Japanese.

Mutsuhito's court officials also modernized the Japanese government. Japan's first constitution was proclaimed in 1889. Under the constitution, the emperor was the head of the state and the source of all power. He appointed high government officials, who were responsible to him. He was supposed to be divine. Japanese children were taught that Emperor Mutsuhito was the 122nd direct descendant of Jimmu Tenno.

Nearly all Japan's industry was controlled by eight families. These family groups, called the *Zaibatsu*, ran mines, factories, and trading firms, and controlled banks and newspapers. The most important business families included the Mitsui, the Mitsubishi, and the Sumitomo.

Increasing World Power. In the 1890's, Japan began to adopt a strong foreign policy. The Japanese wanted to do away with the treaties of extraterritoriality which the United States, Great Britain, and other countries had imposed. These treaties allowed Westerners to live in Japan without being subject to Japanese law (see EXTRATERRITORIALITY). The Japanese adopted a Penal Code in 1880 and a Civil Code in 1890 which provided for just treatment of foreigners in Japanese courts. In 1899, Western nations signed treaties with Japan abolishing extraterritoriality. Marquis Hirobumi Ito, who became premier in 1886, helped form Japan's imperialistic policies.

Japan and China became rivals in Korea. This rivalry led to the Chinese-Japanese War of 1894-1895, which resulted in a Japanese victory. China gave up its



Wide World

A Giant Doll is an advertisement for Kokeshi dolls of all sizes displayed on the shelves of a toy store. These dolls have been made in the same way for three hundred years. The dolls' heads squeak, imitating a baby's cry, when they are twisted.

claims to Korea, and gave Formosa to Japan. China also gave Japan rights in southern Manchuria, but the Western nations forced Japan to give up these rights. In 1902, Japan made an alliance with Great Britain.

The country felt itself strong enough in 1904 to object when Russia expanded its claims to rights in Manchuria and Korea. This led to the Russo-Japanese War, in which Russia was badly defeated. President Theodore Roosevelt suggested that Russia and Japan end the war. He negotiated the Treaty of Portsmouth, signed in 1905, by which Russia gave up its claims to Korea. Russia also gave Japan the South Manchuria Railway, the rights to leases in the Liaotung Peninsula in Manchuria, and the southern half of Sakhalin Island.

World War I and After. At the beginning of World War I, Japan declared war on Germany. Japanese forces did not fight in Europe, but Japan took the German-held city of Tsingtao in China and the German-owned islands in the Pacific. In 1915, Japan took advantage of the war in Europe to extend its influence in China by means of the so-called Twenty-One Demands, which gave Japan special privileges in China. The League of Nations gave Japan a mandate over the Marshall, Caroline, and Mariana islands.

Japan joined the League of Nations and supported many measures for peace. At the Washington Naval Conference in 1921-1922, Japan agreed to limit its navy to a size smaller than the navies of either Great Britain or the United States. The Japanese Navy was to have three battleships for every five battleships in the navies of Great Britain or the United States. Japan also agreed to withdraw from Shantung, China, and to sign the Nine-Power Treaty, which guaranteed the territorial independence of China. The Japanese also signed the Kellogg-Briand Pact of 1928 and the London Naval Treaty of 1930.

The Rise of Militarism. Japan's liberal leaders won their last victory when they signed the London Naval Treaty in 1930. Prime Minister Yuko Hamaguchi

JAPAN

(1870-1931) was shot by an assassin after he insisted that Japan should sign the treaty. Japan suffered during the world depression, and the Japanese people turned away from the Government's policy of friendship with China. The Zaibatsu industrial trusts wanted to expand Japan's influence, in order to provide more markets for Japanese goods. The country's military leaders had always favored a strong policy toward China. They wanted Japan to win areas with special privileges on the mainland of Asia. The militarists did not have to ask permission for what they wanted to do, because they could act in the name of the emperor without consulting the Diet or the Cabinet. Extreme nationalists from all groups organized secret or special societies. Members of these societies believed that the Japanese were divine and had a mission to rule the world.

War with China. In 1931, Japan's military leaders became alarmed when the Chinese strengthened their government in Manchuria. The Japanese were allowed to have troops in Manchuria to protect their railroad. On September 18, 1931, these troops created an "incident" near Mukden and began to occupy all Manchuria. There is evidence that the Japanese Cabinet knew nothing about this attack until after the army had acted. The Japanese quickly seized all Manchuria.

The League of Nations investigated Japan's action and condemned it, but took no other action. Japan withdrew from the League in 1933. The Japanese set up a puppet empire in Manchuria and renamed it Manchukuo. They chose the last Emperor of China, Henry Pu-Yi, as puppet Emperor of Manchukuo.

Japan built industries and developed mines in Manchuria. The military leaders grew confident after their easy success there. Military terrorists assassinated Prime Minister Ki Inukai (1855-1932). They also killed other liberal politicians during a revolt in February, 1936. From that time on, Japan's military leaders were in firm control of Japanese policy. They began a propaganda campaign to make Japan the center of a "Greater East Asia Co-Prosperity Sphere."

After winning Manchuria, Japan extended its influence into other parts of northern China. On July 7, 1937, a small fight at the Marco Polo Bridge near Peiping, China, flared into open warfare between Japan and China. Japanese armies won control of northern and central China and took Canton, in southern China, by the end of 1938. See CHINA (War with Japan; Guerrilla Warfare).

Steps Toward World War II. Japan began to cooperate with Nazi Germany and Fascist Italy. In 1936, Japan signed an anti-Communist pact with the other two Axis nations. In December, 1937, Japanese planes bombed and sank the United States gunboat *Panay* in the Yangtze River. The Japanese government formally apologized for the incident and paid an indemnity of more than \$2,000,000. Japanese soldiers were involved in clashes with Russian troops on the border between Manchuria and Siberia in 1938 and 1939.

Japanese leaders were shocked when Germany and Russia signed a nonaggression pact in August, 1939. But, in 1940, the Japanese also signed an agreement with Russia. In spite of the treaty, the Japanese kept a large army along the Manchurian border.

When World War II began in Europe in September, 1939, the Japanese began trying to force the British to abandon their interests in northern China. France fell to Germany in 1940, and Japanese armies invaded and occupied French Indochina. As Japanese aggression spread, the United States became less friendly toward Japan. The United States in 1940 cut down its sales of oil and scrap iron to Japan. Later, Japan signed an alliance with Germany and Italy. In 1941, Japan was put on a full wartime basis, with rigid control of industry, agriculture, and prices. On October 17, 1941, Prince Fumimaro Konoye's coalition cabinet fell. General Hideki Tojo became prime minister. The militarists were in full control and Japan was ready for war.

World War II. Japan struck on December 7, 1941, attacking American military bases at Pearl Harbor, Hawaii, and in Guam and the Philippine Islands. Many Japanese victories followed. At the time of their greatest expansion, the Japanese controlled an area from the Aleutians 4,500 miles south to the Solomons, and from Wake Island 5,000 miles west to Burma. See WORLD WAR II.

As Japanese defeats increased, political unrest grew in Japan. On July 18, 1944, Hideki Tojo's war cabinet fell. Two other cabinets fell within the next year. In early 1945, the battle for the Japanese homeland began. American heavy bombers hit industrial targets, and warships pounded coastal cities. On August 6, the first atomic bomb to be used in warfare was dropped on Hiroshima. Two days later, Russia declared war on Japan and invaded Manchuria and Korea. The next day, August 9, American fliers dropped a second and larger atomic bomb on Nagasaki.

It was clear to Japanese leaders by this time that Japan had lost the war. Japan still had large armies in China and on some Pacific islands, but they had been cut off from supplies and from each other. Japan had almost no navy, merchant marine, or war materials left to aid them. On August 14, Japan agreed to surrender. At noon the next day, Emperor Hirohito announced in a radio broadcast to his people that Japan had agreed to end the war. On September 2, the Japanese signed the surrender agreement aboard the battleship U.S.S. *Missouri*, anchored in Tokyo Bay where Perry's warships had anchored in 1853. Japan lost all its territory on the mainland of Asia, and all the islands it had governed in the Pacific. It lost the Kurils, southern Sakhalin, the Ryukyus, and Formosa. It retained only its four main islands and a few others nearby.

Allied Military Occupation began in late August, 1945. General Douglas MacArthur was named Supreme Allied Commander. The Japanese government acted only as an instrument to carry out the Supreme Commander's orders. The Allies tried 28 major Japanese leaders for war crimes. Tojo and six other leaders were executed. In Japan's first free elections, held in 1946, almost 3,000 persons were candidates for the 466 seats in the Diet. Among the candidates were 38 women. About 72 out of every 100 registered voters went to the polls in the first elections.

Japan adopted a new constitution in 1946. It went into effect on Constitution Day, May 3, 1947. The first prime minister under the constitution was a Socialist, Tetsu Katayama. The constitution made many reforms in Japan's government. It took all executive power

from the emperor, abolished the peerage, and gave women the right to vote. The constitution abolished the army and navy, and stated that Japan would give up the use of war as a political weapon forever.

Japan's economy recovered slowly after the war. The government carried out a program of land reform, breaking up large estates and giving the land to the farmers who worked it.

On Sept. 8, 1951, Japan signed a peace treaty with 48 nations at San Francisco. Russia, Poland, and Czechoslovakia were present at the conference, but refused to sign the treaty. The treaty went into effect on Apr. 28, 1952, and the Allied occupation officially ended on that day.

After the Occupation. Japan tried to enter the United Nations in 1952, but failed because of protests by Russia. Japan gained UN membership after Japan and Russia signed a peace treaty in 1956.

The United States maintained military bases throughout Japan under terms of the 1951 peace treaty. During the 1950's anti-American resentment increased, and communists and socialists in Japan demanded that U.S. armed forces leave the country. Several incidents caused anti-American feeling. One incident in March, 1954, involved contaminating a Japanese fishing vessel, the *Fukuryu Maru*, and its crew of 23 men. The ship was showered by atomic fallout from U.S. bomb tests in the Pacific. Later, one of the 23 crewmen died as a result of the accident, and panic and resentment spread throughout Japan.

After the Korean War ended, Japan gradually developed its industries, and once again became one of the major industrial nations of the world. By 1957, Japan was using atomic power to produce electricity.

Recent Events. In 1959, Crown Prince Akihito broke tradition by marrying a commoner, Michiko Shoda, the daughter of a wealthy industrialist. In the same year, a disastrous typhoon struck near Nagoya, killing about 5,000 persons.

During 1959 and 1960, trade unions and Zengakuren, a powerful student organization, staged several anti-American demonstrations. New protests broke out when Japan signed a new security treaty with the United States in 1960. Widespread rioting forced President Eisenhower to cancel an official visit to Japan in June, 1960. Prime Minister Nobusuke Kishi resigned in July because of reaction to the treaty. Hayato Ikeda became prime minister. In 1961, Japan announced that it planned to build and orbit an earth satellite by 1963, using rockets and launching facilities provided by the United States.

HUGH BORTON

Related Articles in WORLD BOOK include:

BIOGRAPHIES

See the list of biographies under Japan in the BIOGRAPHY section of the READING AND STUDY GUIDE.

CITIES

Fukuoka	Kyoto	Osaka	Tokyo
Hiroshima	Nagasaki	Sapporo	Yawata
Kawasaki	Nagoya	Sendai	Yokohama
Kobe			

HISTORY

Axis	Hirohito
Boxer Rebellion	Kamakura Period
China (History)	Kamikaze
Chinese-Japanese Wars	MacArthur, Douglas
Colombo Plan	Manchuria

Mikado
Perry (Matthew Calbraith)
Russo-Japanese War
Samurai

Shogun
World War I (The War Begins; Results of the War)
World War II

PRODUCTS

For Japan's rank among other countries in production, see the following articles.

Aluminum	Lumber	Salmon	Tea
Barley	Orange	Silk	Textile
Copper	Paper	Silver	Tobacco
Forest and Forest Products	Publishing	Soybean	Tuna
	Rice		

UNCLASSIFIED

Ainu	Japanese Print
Ancestor Worship	Jinrikisha
Architecture (Japanese)	Judo
Asia (color pictures, In a Japanese Wedding Ceremony; A Formal Tea Ceremony)	Kite
Bamboo	Kyodo
Buddha (picture, The Great Buddha)	Lacquer Ware
Chrysanthemum	Manufacturing (table)
Clothing (color picture, The Orient)	Marriage (picture)
Dancing (The Far East)	Motion Picture (In Other Countries)
Doll (color picture)	Mount Fuji
Drama (The Oriental Drama)	Navy (Major Navies of the World)
Electric Power (table)	Painting (Oriental Civilizations)
Far East	Paperwork, Decorative
Fishing Industry	Pearl (pictures)
Flower (Flower Arranging)	Races of Man (picture)
Hara-Kiri	Ryukyu Islands
Hokkaido	Sculpture
Japan, Sea of	Shelter (Dangers)
Japanese Language	Ship and Shipping (table)
Japanese Literature	Woman (In Japan)

Outline

I. The Land and Its Resources

- A. Location, Size, and Surface Features
- B. Rivers, Lakes, and Bays
- C. Coast Line
- D. Earthquakes

- E. Natural Resources
- F. Climate
- G. Conservation
- H. Hydroelectric Power

II. The People and Their Work

- A. The People
- B. Ways of Life
- C. Cities
- D. Agriculture
- E. Fishing Industry
- F. Manufactures

- G. Mining
- H. Transportation
- I. Trade
- J. Tourist Industry
- K. Communication

III. Social and Cultural Achievements

- A. Education
- B. The Arts
- C. Religion

IV. Government

V. History

Questions

- What do the Japanese call their country?
- In what ways do the Japanese use bamboo?
- How are many Japanese houses different from houses in the United States and Canada?
- What ocean currents influence Japan's climate?
- How did America's trade with Japan begin?
- What did President Theodore Roosevelt have to do with one of Japan's wars?
- What minerals does Japan have?
- How do Japan's mountains affect its farming?
- What were the *zaibatsu*? The *samurai*?
- What country influenced early Japanese culture?
- Who was the first Supreme Allied Commander in Japan?
- What are Japan's leading exports?

JAPAN, SEA OF

JAPAN, SEA OF, is an arm of the Pacific Ocean. It separates the islands of Japan from Korea, Manchuria, and the eastern coast of Russia. The southern end of the Sea of Japan is connected to the East China Sea by the Korea Strait. The northern end of the sea is connected to the Pacific Ocean by Tsugaru Strait and to the Sea of Okhotsk by Soya Strait and the shallow Sakhalin Strait.

The Sea of Japan covers about 400,000 square miles. The straits are shallow, but over the greater part of the Sea of Japan the depth exceeds 6,000 feet, averaging 4,500 feet. In some eastern sections, the sea is more than 12,000 feet deep. For location, see JAPAN (color map).

BOSTWICK H. KETCHUM

JAPAN CLOVER. See LESPEDEZA.

JAPAN CURRENT is a warm, dark-colored current in the Pacific Ocean. It is sometimes called *Kuroshio*, which is the Japanese word for *black current*. The Japan Current begins near the southeast coast of Asia, where it separates from the larger North Equatorial Current.

The Japan Current has a warming effect on the climate for most of its course in the Pacific. The current passes the east coast of Formosa and then changes its course to the northeast and heads toward Japan.

After passing the Kuril Islands, the Japan Current merges with the easterly moving waters of the North Pacific West Wind Drift. Because of the lower surface temperatures in the Pacific Ocean, associated with the current system, there is much less warming effect on the climate of the northwestern coast of North America than the Gulf Stream has on the climate of northern Europe.

HENRY STOMMEL

See also OCEAN CURRENTS.

JAPANESE BEETLE

is an insect harmful to trees, garden plants, and crops. It causes losses that amount to many millions of dollars every year. The beetle probably arrived in the United States in 1916 on the roots of imported Japanese irises. Observers first noticed the pest near Riverton, N.J. It now is found in about 20 states. But the Middle Atlantic seaboard remains the most heavily infested area.

The adult Japanese beetle is less than a half inch long, and about one-fourth inch wide. Coppery-brown wings cover its metallic-green, oval-shaped body. It generally lays its eggs in loamy soil in July. The larva hatches in August or September, and spends the autumn and winter months sleeping and feeding on roots. The following June the adult insect comes out of the ground and starts feeding. Japanese beetles attack more than 250 varieties of plants.

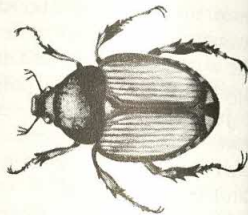
The United States Department of Agriculture enforces a strict quarantine against the Japanese beetle. It also fights this pest with poison sprays, traps, and parasitic insects, like the digger wasp, which feed on the beetle's grubs. Another method devised to kill the grubs is to spread Type A milky disease bacteria over the soil.

Scientific Classification. The Japanese beetle belongs to the family *Scarabacidae*. It is genus *Popillia*, species *japonica*.

R. E. BLACKWELDER

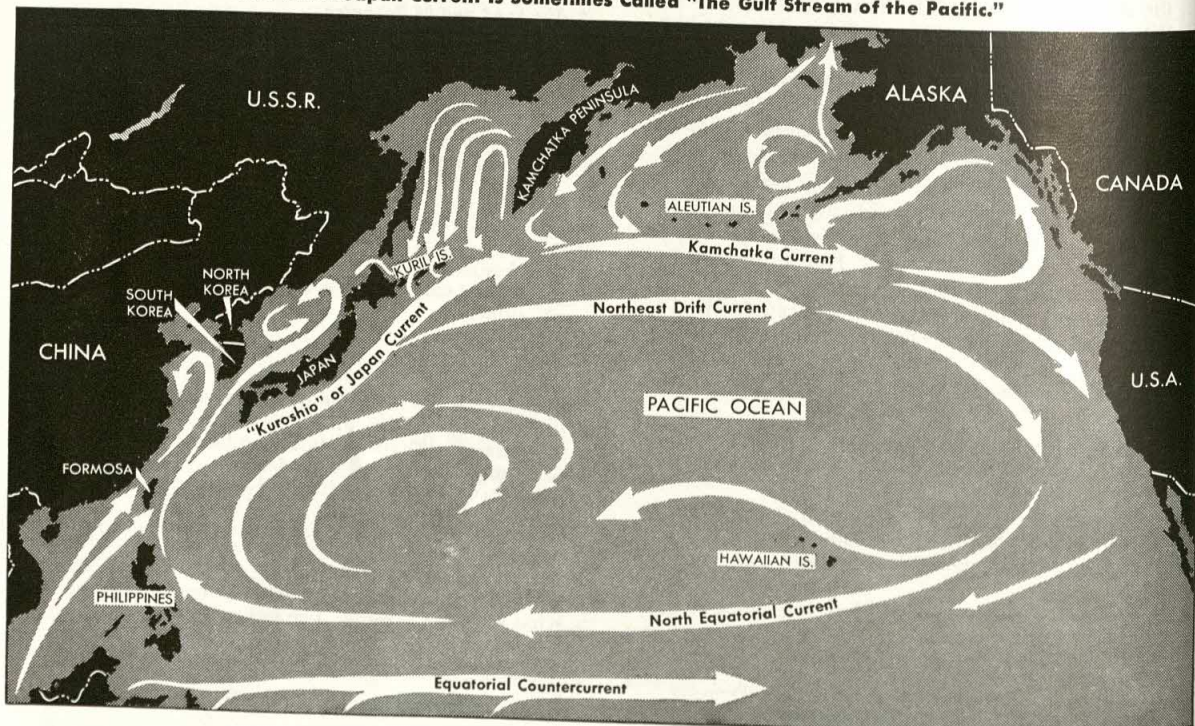
See also BEETLE (color picture).

JAPANESE EXCLUSION ACT OF 1924. See ORIENTAL EXCLUSION ACTS.



The Japanese Beetle damages crops, trees, and lawns.

The Warm Japan Current Is Sometimes Called "The Gulf Stream of the Pacific."



JAPANESE LANGUAGE is the native tongue of the people of Japan and the neighboring Ryukyu and Bonin islands. It is also widely understood in former Japanese possessions such as Formosa and Korea. Since 1868, the speech of the city of Tokyo has become the standard language of the Japanese people.

The rhythm of Japanese allows an even, metronome-like beat for each syllable. Differences in pitch are the distinctive features of words and phrases, much as differences in stress and emphasis are typical of English. Japanese dialects can be divided into three types, based on pitch-accent patterns. Standard Japanese illustrates the *majority* type. The *Kansai*, or *Western*, type is characteristic of western Honshu, most of Shikoku, and southern Kyushu. The *single-pattern* type is found in northeastern Honshu and central Kyushu.

The structure of Japanese is similar to that of Korean. Both resemble languages of the Ural-Altaic type, which also includes Finnish and Turkish. The origins of these languages are still uncertain.

Japanese is spoken in different styles according to social situations. The *intimate* is correct in everyday conversation. The *polite* is used with cultivated company. The *honorific* style confers honor and respect when spoken, and is used for older people and superiors. There are also the *impersonal* style used in speeches and writing, and the *modern literary* style.

The language has both inflected and uninflected words. Each inflected word consists of a stem and one of a set of endings. Among these words are adjectives and verbs, including the linking verbs. The uninflected words include nouns, all the articles, and most prepositions and conjunctions.

Japanese vowels and consonants are generally softer than those of most European languages. All Japanese words end in vowels or the letter "n." The language has eight vowel sounds—*ah, eh, ee, o, oo, i, oi, and ay*. The word order of Japanese sentences is like that of English, except that verbs come at the end of sentences. There are no exact expressions in Japanese for "yes" and "no." For example, in order to answer the question "Do you like this?", a person would say "I like this" or "I do not like this."

The Japanese borrowed the Chinese system of writing, as well as many Chinese words. Some of these were simplified and codified into *syllabaries*, or tables of syllables in written symbols. These syllabaries are called *kana*. Two of them are in use today. The first is a more common, rounded form known as *hiragana*. The second, the square-shaped *katakana*, is used much as italics are in English. Japanese is normally written with a combination of *kana* and Chinese characters (kanji) called *kanamajiri*. Sometimes *kana* of reduced size are added alongside a character to show its pronunciation. In 1948 the Japanese Ministry of Education undertook a program to simplify the system of writing. This program attempted to reduce the number of characters to 1,850, and to simplify their shapes.

The Latin alphabet is also taught in Japanese schools, along with three systems of Romanized Japanese. The *Hepburn Romanization* writes consonants as in English and vowels as in Italian. The other two romanized types of Japanese, the *National* and the *Nippon-Type*, are both based on the structure of the Japanese language itself.

SAMUEL E. MARTIN



Natori, Black Star

Japanese Writing is a highly skilled art. Writers use a brush, so they can make heavy and light lines. The brush is held almost straight up and down, and the second finger guides it. Characters are written from the top of the page down, starting at the right side of the page and working to the left.

JAPANESE LITERATURE is an important part of the everyday life of the Japanese people. Many well-educated persons in Japan can write poetry as easily as they write business letters. The Japanese have a deep love of tradition, and a great love of form. These two characteristics show up in their literature. Most dramatic and poetic forms are hundreds of years old. Japan's literature began under the influence of the Chinese. Today it is influenced by ideas from the Western World. But it developed by itself for more than 1,000 years.

Poetry. The rhyme and rhythm found in Western poems do not exist in Japanese poetry, because of the nature of the language. Poems written in classical verse forms are descriptions. The poet expects the reader to feel the scene himself. His poem only suggests the feeling. There are two major verse forms, the *tanka* and the *haiku*. They are measured by the number of syllables in a line and the number of lines in a poem. The *tanka* has only thirty-one syllables in five lines. The first and third lines have five syllables, and the others have seven. The *haiku* or *hokku* has only three lines, with five, seven, and five syllables. The rules for writing this brief poem are strict. Almost always some word must be used which refers to a season of the year. Along with these forms, Japanese poets also use some other forms. Modern poets often imitate the structure of Western forms. Children's poems, called *doyo*, and folk songs, called *min-yo*, also are popular.

Drama, like Japanese poetry, requires great imagination on the part of the audience. In the *Nô* plays, two or three actors speak in a stylized way and use understated gestures. Often they wear special masks. There are about fifteen of these masks, each one representing a single emotion. A pine tree painted on the back wall of the stage provides the only scenery. A chorus tells much of the story, chanting to music while the actors dance

JAPANESE LITERATURE

and use pantomime. Every word and gesture used on the stage must conform to a formal set of rules. Short intermission pieces called *kyogen* are often presented to enliven Nō performances.

Kabuki plays are more popular than Nō, because they are easier to understand. Much of a kabuki play is made up of song and dance. There is little speaking in older kabuki plays, but modern ones make use of much dialogue. Symbolic and exaggerated gestures are often used to tell the story. Usually the plays are written to show



Wide World

A Spider Throws His Web in one of the kabuki dance-dramas, the most popular dramatic form in Japan. Men play all the parts in a kabuki play, representing women and animals as well as men.

off an actor's talents, rather than as a great literature. Puppet plays called *buraku* once rivaled kabuki, but now appeal to a limited audience. A semimodern form of drama called *shimpa* is still popular, but *shingeki*, or Western theater, is gradually taking its place.

Prose writing in Japan usually has not been as important as the other forms. The Japanese have a few long novels, but usually prefer shorter forms such as the short story. They have also developed a rambling, diary-type book which combines short essays with the diary. Many works of fiction are based on historical events or on long folk *sagas*, or legends.

History. The oldest complete work in Japanese literature is the *Kojiki*, or *Record of Ancient Things*, written in A.D. 712. It was written with Chinese letters, because at that time this was the only form of writing in Japan.

Man-yōshū, the first important collection of Japanese poetry, also was written with Chinese characters. It contains about 4,500 poems, many of them in *tanka* form, and was completed about 760. Many of these poems are much older than the collection.

In the early 1000's, Lady Murasaki wrote *Genji monogatari*, or *The Tale of Genji*. It often is considered the greatest Japanese novel. It was written in *kana*, a simplified phonetic way of writing Japanese.

Nō drama was developed in the 1300's by Kan'ami (1333-1384) and his son Zeami (1363-1443). These two dramatists produced most of the classical Nō plays. Kabuki drama was developed in the early 1600's. Haiku poetry became popular in the late 1600's. Interest in ancient Japan arose in the late 1700's, when Motoori (1730-1801) wrote the *Kojikiden*, or *Exposition of the Record of Ancient Things*. Modern Japanese writers have been deeply influenced by Western styles and techniques. Especially well known is Ryunosuke Akutagawa (1892-1927), whose short story, *Yabunoaka* (*In the Bushes*), was made into the successful motion picture, *Rashomon*.

SAMUEL E. MARTIN and HUGH BORTON

JAPANESE MINK. See FUR (Names of Furs).

JAPANESE PRINT. The Japanese have long been famous for their beautiful pictures printed from carved wooden blocks. Some of the prints are made with only one color. Some are made with many colors. Japanese prints are especially known for their simple lines and strong delicate coloring. In the 150 years between 1740 and 1890, the Japanese created more color print designs than any other people. In the late 1800's, Japanese prints became popular in Europe and America. Their bold decorative quality had a deep effect on many Western artists.

How Japanese Prints Are Made. A Japanese wood engraver cuts his design along the grain, on the plank side of a hardwood block. He then covers the raised part of the block with ink and presses a sheet of paper down onto it by rubbing it with a bamboo-wrapped pad. Each color may require a separate block. Some colors are formed by overprinting one color on top of another. The paper is made of the bark-fiber of the mulberry tree. It is thin, tough, and porous. It is *sized*, or filled with powder, so colors will not run on it. The Japanese method of making prints is quite different from the methods used in Western countries. A Western wood engraver usually uses the cross-grain end of a piece of wood. He makes prints from the block by pressing it face down onto a piece of paper or cloth. See **WOODCUT**.

In Early Days, printed pictures of Buddhist gods were made in Japan as early as the 1100's or 1200's. If we consider printed writing as a form of print, the oldest surviving example in the world is a series of religious charms made about A.D. 770.

Color Prints, for which the Japanese are so famous, developed much later. The first single sheets in black and white were made in the 1600's, at a time when the government became interested in spreading education. This also was the time when the *kabuki* plays became popular (see **JAPANESE LITERATURE**). Artists began to illustrate heroes of the stage and women famous for their beauty, as well as characters from history and legend. These prints came to be known as *ukiyo-e*, often translated as "Pictures of the Floating World." The artists made use of lines to indicate depth and volume. They

JAPANESE PRINTS

Landscape Prints, such as this print by Hiroshige, "The Great Bridge in a Summer Rain-Storm," were popular in Japan in the 1830's.



Art Institute of Chicago

Portraits of Actors in well-known roles became popular in the 1600's. Many persons in the late 1700's felt that Sharaku's portraits, such as this one, were too realistic.

Long Scrolls hang in many Japanese homes. They present a difficult problem in composition. Kiyo-naga made prints such as this, "The Blue Umbrella," in the late 1700's.



Beautiful Women were the subjects of one group of printmakers. Utamaro, one of the last of the group, made this print in 1797.





Nippon Studio, Black Star

A Japanese Artist Paints a Scroll. The paint is put directly on silk or on paper. Print makers often design their works first on paper. Painters develop individual styles in their brush strokes. These help to identify their works.

used the supple brush strokes common in the art of many Far Eastern countries.

Each class of feudal society in Japan tended to have its own art style. The artisans, craftsmen, and merchants, who made up the lowest social class, favored the ukiyo-e style. Almost all the artists who made the Japanese print famous lived in the military capital at Edo (now Tokyo) and not at the Emperor's capital of Kyoto. Publishers paid the artists to make the design. Then they hired specialists to cut the wood blocks and employed printers to apply the colors. There was a constant demand for new styles as the old ones became less popular. The artists generally were poor.

Moronobu (c. 1625-c. 1695) is famous as the first Japanese artist to illustrate a book page in a truly artistic way. He made use of strong outlines and distributed black and white areas carefully. Moronobu made single sheet pictures, as well as illustrations. Some of these were colored by hand.

Actor Prints. Kiyonobu I (1664-1729) founded the Torii family. This family was associated with the stage for generations, and developed the actor print. Kiyonobu and his son Kiyomasu (1694-1716) are famous for forceful prints with swirling black and white lines, or with simple colors applied by hand. Masanobu (1686-1764) generally favored prints picturing beautiful women. In his day *urushi-e* prints became the fashion. These prints imitated the effects of lacquer designs. The ink, thickened with glue, became shiny. Often brass-flake filings were used to give a powdery effect.

The two-color print was developed about 1742. The best-known artists at this time were Kiyohiro (active about 1751-1760), Kiyomitsu (1735-1785), and Toyonobu (1711-1785).

Polychrome Prints, or prints made with many colors, first appeared in 1765. This technique quickly became

standard. Harunobu (1725-1770) produced charming polychrome prints of youthful lovers.

The next great artist was Kiyonaga (1782-1815) of the Torii family. He developed a new style for pictures of beautiful women. He made sets of two or three prints, and added a more realistic background. Shunsho (1726-1792) made famous prints of actors. Sharaku, who was active for only ten months in the years 1794 and 1795, drew savagely realistic portrait heads of actors. Sharaku's prints were not popular in his day. But today they remain as masterpieces of characterization and subtle color. The last great champion of the print of beautiful women was Utamaro (1753-1806), who made tender pictures of mothers and children. In many of Utamaro's prints there is a fine use of subtle black hues and shades among delicate colors.

Landscape and Nature Prints developed in the early 1800's. About 1828, Hokusai produced his famous set of *Thirty-Six Views of Fuji*. Some six years later, Hiroshige brought out his set of *Fifty-Three Stations of the Tokaido Highway*. Hokusai composed dramatic scenes of man and nature. Hiroshige sought the peaceful, quiet mood of Japan's scenic countryside, often with one or more men and women at work.

The works of Kiyochika (1847-1915) show some of the influence of Western ideas after the opening of Japan in 1854. The color print was a part of the feudal system, and died out with it. But, early in the 1900's, artists started to revive the Japanese print along current and international lines.

ROBERT T. PAINE, JR.

See also HARUNOBU SUZUKI; HIROSHIGE ANDO; HOKUSAI KATSUSHIKA.

JAPANESE SPANIEL is a frisky little dog. It weighs about 7 pounds. It has a broad, rounded head, large, dark eyes, and a very short nose. Its coat is silky, and it has a collar of long hairs around its neck. The coat is white, with patches of black, red, or lemon yellow. The Japanese spaniel was brought to the Western world from Japan in the 1850's. It probably originated in China. An emperor of Japan about 500 years ago became so fond of his spaniel, or *chin chin*, that he ordered the Japanese to worship dogs.

JOSEPHINE Z. RINE

The Japanese Spaniel has a collar of long, silky hair around its neck and a fluffy tail that curls up over its back.

Budorah-House of Champion, Denver



JAPANESE-WOOD OIL. See TUNG OIL.

JAPANNING, *jah PAN'ing*, is a process of varnishing metal, wood, leather, papier-mâché, and other materials in imitation of the lacquer wares of Japan and China. It was once widely used to finish various household articles and ironwares, but coatings today are usually made of synthetic resins. Certain types of art work and crafts still make limited use of japanning. A modified form produces patent leather. See also LACQUER WARE; VARNISH.

WILLIAM M. MILLIKEN

JAPHETH. See NOAH.

JAPONICA. See CAMELLIA.

JAR. See BOTTLE; CANNING (Jars; picture, Different Kinds of Jars).

JARDIN DES PLANTES. See BOTANICAL GARDEN.

JARGON, *JAHR'gahn*, in its most common meaning is the speech often used by professional or other groups of people. The jargon of the entertainment world is used by actors, musicians, and ballet dancers. Doctors, dentists, and lawyers often use jargon with each other if they do not want their clients to understand what they are saying.

Jargon may also mean a mixture of two or more languages. Pidgin English is a jargon. The word jargon also may be applied to a writer's style. For children, the use of too many big words is jargon.

JARL. See NORWAY (Early Days).

JARRAH. See EUCALYPTUS.

JARVIS is a small, low, sand and coral island in the central Pacific Ocean. It lies 25 miles south of the equator and 230 miles southwest of Christmas Island. The island covers about $1\frac{3}{4}$ square miles.

A British whaling ship discovered Jarvis in 1821. Great Britain annexed it in 1899. Jarvis is claimed by Great Britain, but it is considered an American island in the Line, or Equatorial, Islands. Settlers from the Hawaiian Islands arrived on Jarvis in the 1930's. The island has not been occupied since the start of World War II.

EDWIN H. BRYAN, JR.

JARVIS CHRISTIAN COLLEGE is a coeducational liberal arts school in Hawkins, Tex. Courses lead to the B.A. and B.S. degrees. The Disciples of Christ operate the school, which was founded in 1912 by the Christian Women's Board of Missions. Jarvis Christian College was chartered in 1939. For enrollment, see UNIVERSITIES AND COLLEGES (table).

JASMINE, *JAZ'min*, is a white or reddish flower with a delightful fragrance. It grows on a climbing or erect shrub that belongs to the olive family. The jasmines first grew in the warm parts of the Eastern Hemisphere. They are now often seen in gardens of the southern United States.

The common white jasmine is a vinelike plant. It has attractive dark green leaves and sweet-scented white flowers. Poets have often written about this jasmine, or *jessamine*.

The Spanish jasmine has larger flowers tinged with red underneath. In southern France, botanists graft the Spanish jasmine on two-year-old plants of the common white species. The graft results in a bushy plant that has unusually large and fragrant blossoms, widely used in the manufacture of oil of jasmine. Oil from the common jasmine can also be used in perfumes. The Chinese use jasmine flowers to scent teas.

The so-called yellow jasmine is not a true jasmine, but

The Blossoms of Spanish Jasmine supply a fragrant oil used in making perfumes.

a gelsemium, and the Cape jasmine is a gardenia.

Scientific Classification.

Jasmine belongs to the family *Oleaceae*. The common jasmine is classified as genus *Jasminum*, species *officinale*. The Spanish jasmine is *J. grandiflorum*. J. J. LEVISON

See also GARDENIA; GELSEMIUM.

JASMINE, CAPE. See GARDENIA.

JASMINE, YELLOW. See GELSEMIUM.

JASON, *JAY'sun*, was the leader of the Argonauts in Greek mythology. Pelias, his uncle, took the throne of Iolcus from Jason's father, Aeson. Aeson sent Jason to the good centaur, Chiron. Jason grew up in the cave of Chiron, and the centaur taught him many skills while he was there.

Pelias had been told to beware of a man wearing one sandal. Jason lost a sandal while crossing a river on his way to Iolcus. So when Pelias saw him, he was afraid and sent Jason to seek the Golden Fleece, thinking that Jason would never come back. Jason was willing to go and gathered a band of heroes, who sailed on the *Argo* to Colchis.

At Colchis the sorceress Medea, daughter of the king, fell in love with Jason and helped him win the Fleece. She went back to Greece with him and became his wife. Later, Jason divorced her to marry the princess of Corinth. In revenge, Medea killed her own two sons. According to one story, Jason died when the ship's figurehead fell from a wall upon him. JOSEPH FONTENROFF

See also ARGONAUTS; GOLDEN FLEECE; MEDEA.

JASPER, a mixture of quartz and iron oxide, is formed in colors of white, red, yellow, brown, and black. Sometimes these colors are arranged in layers in the rock. Jasper is harder than a knife, and scratches glass. It takes a high polish, and is used for mantels, pillars, and other fancy interior finishings. Fine grades of jasper are polished into gems. The stone is found in many localities, but the most beautiful varieties come from Siberia in Russia, Greece, India, Turkey, and Silesia in Poland.

Jasper is mentioned in the Bible as a part of the breastplate of the Jewish High Priest (Exodus 39:13). In Revelations 21:19, jasper is mentioned as one of the 12 stones in the foundation of New Jerusalem. The ancient Greeks and Romans believed it could heal many illnesses and draw the poison from snake bites. The North American Indians used a jasper-like stone called *flint* to make arrowheads. HARRISON ASHLEY SCHMITT

See also QUARTZ.

JASPER NATIONAL PARK. See CANADA (National Parks); ALBERTA (color picture, "Snowmobiles").

JASPER WARE. See WEDGWOOD WARE.

JATAKA TALES. See STORYTELLING (India).



J. Horace McFarland

JATO

JATO stands for **Jet-Assisted Take-Off**. It refers to an auxiliary rocket motor that supplies additional thrust when an aircraft takes off. Aircraft use JATO when they must take off with unusually large loads, or when they must take off from small or unimproved landing areas.

Some aircraft carry JATO motors to use if the main engines fail. JATO is used only in emergencies, because of its great expense. It costs about \$10,000 to use JATO on a large bomber. The most common JATO motors are simple, solid-propellant rockets.

C. B. SMITH

JAUNDICE, *JAWN* *dis*, is a yellowish discoloration of the skin, tissues, and blood. It results from an increased amount of *bilirubin*, a yellowish bile pigment, in the blood. There are three types of jaundice: (1) hemolytic, (2) hepatic, and (3) obstructive.

Hemolytic jaundice results from an increased destruction of red blood cells. When these cells break down, they liberate excessive amounts of hemoglobin, from which bilirubin is derived. The increased concentration of bilirubin in the blood produces jaundice.

Hepatic jaundice is caused by viruses that injure the liver cells and make them unable to excrete bile pigment. *Obstructive jaundice* occurs when the bile ducts are blocked, causing bile to collect. The yellow color of the skin becomes intense in this type of jaundice.

Jaundice is not a disease, but a symptom of interference with normal bile elimination. Doctors try to find the underlying cause and treat it.

WILLIAM DAMESHEK

See also **BILE**; **GALLSTONE**; **HEPATITIS**; **LIVER**; **YELLOW**.

JAUREGG, JULIUS WAGNER VON. See **FEVER**.

JAVA, or, officially, **DJAWA**. See **INDONESIA**.

JAVA MAN is the name given to one of the oldest types of man. Scientists believe that he lived about 500,000 years ago. In 1891 and 1892, a Dutch scientist,

Eugene Dubois, dug some bones from a riverbank on the island of Java (now part of Indonesia). These received the name of Java Man. Since then, several other specimens have been found. See **DUBOIS, EUGENE**.

Dubois named the man *Pithecanthropus erectus*, which means *erect apeman*. Many scientists now consider him to be *Homo erectus javensis*, or *erect man of Java*. The Java Man represents a stage in the development of modern man from a smaller-brained ancestor. Java Man had a low skull, heavy brow ridges, and large teeth. His brain was smaller than that of modern man's. The thigh bone of this prehistoric man indicates that he walked erect.

CARLETON S. COON

See also **PREHISTORIC MAN** (color picture).

JAVA SEA is an arm of the Pacific Ocean near the Republic of Indonesia. The Makassar Strait and the Flores Sea lie east of the Java Sea. The Indonesian islands of Java and Bali lie on the south. Borneo is north, and Sumatra is west. The sea is connected with the Indian Ocean by the straits of Sunda, Bali, and Lombok.

F. G. WALTON SMITH

JAVA SPARROW. See **WEAVERBIRD**.

JAVELIN, *JAV* *lin*, or *JAV* *uh* *lin*, is a light, slender spear that is thrown for distance in track and field meets today. In ancient times warriors used it as a weapon of war. Ancient hunters also used the javelin.

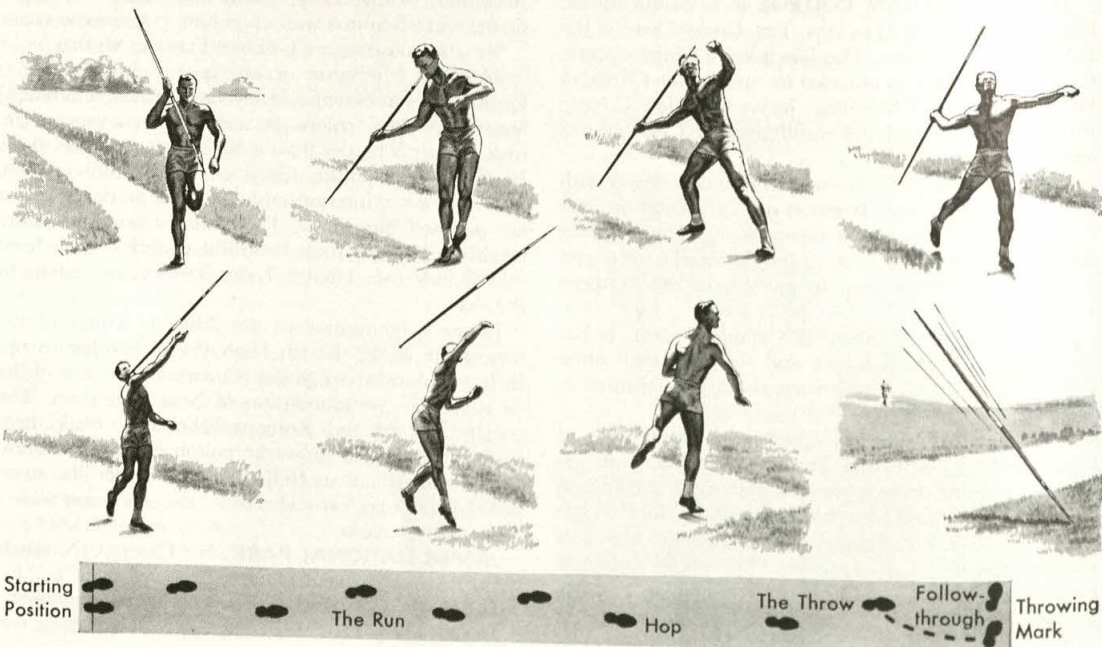
The javelin today is made of metal or solid wood. It has a metal tip and must be not less than 8 feet, 6 $\frac{3}{4}$ inches long. It must weigh at least 1.761 pounds. The javelin thrower grasps the shaft on a cord grip, and runs with it to gather momentum. He hurls the javelin from behind a restraining line, and it must fall within a marked sector, with the point striking the ground first.

For javelin championship figures, see **TRACK AND FIELD** (table, World Track and Field Records). **FRED RUSSELL**

See also **SPEAR**.

JAVELINA. See **PECCARY**.

HOW TO THROW THE JAVELIN



JAVITS, JACOB K. See NEW YORK (Famous New Yorkers).

JAW. See FACE.

JAY forms a subfamily in a larger family which includes ravens, crows, and magpies. Jays are smaller than the crows, and usually more colorful. In their habits, they are mischievous and thieving.

The best-known American species is the *blue jay*. This bright blue bird with crested head lives from eastern North America west to Kansas. The *Canada jay* is familiar to men of the North Woods. This bird boldly steals food and camp refuse. Its habits have gained it such names as *whisky-jack*, *meatbird*, and *camp robber*. The *Canada jay* has gray feathers.

The *Rocky Mountain jay* and the *Oregon jay* have habits and feathers that are similar to the *Canada jay*'s. Various other kinds of jays live in other parts of North and South America, Europe, and Asia.

Scientific Classification. Jays belong to the crow family *Corvidae*. They make up the subfamily *Garrulinae*. The *Canada jay* is classified as genus *Perisoreus*, species *canadensis*. The common blue jay is classified as *Cyanocitta cristata*.

HERBERT FRIEDMANN

See also BIRD (color pictures, Birds' Eggs, Color Makes Them Stand Out); BLUE JAY; CROW.

JAY, JOHN (1745-1829), was a distinguished statesman during the early days of the United States. He was the first Chief Justice of the United States (see SUPREME COURT OF THE UNITED STATES). With John Adams and Benjamin Franklin, he negotiated the treaty of peace with England at the end of the Revolutionary War. Jay helped Alexander Hamilton and James Madison get the Constitution ratified, and wrote some of the articles that appeared in *The Federalist* (see FEDERALIST, THE). He also negotiated the Jay Treaty.

Jay was born in New York City, and was graduated from King's College (now Columbia University) in 1764. He studied law, and was admitted to the bar in 1768. New York sent him as its representative to the First and Second Continental Congresses. He would have been one of the signers of the Declaration of Independence had he not been called away to attend New York's provincial congress.

Jay was president of the Continental Congress from December, 1778, to September, 1779. He then became Minister to Spain. In 1783 he helped frame the Treaty of Paris (see PARIS, TREATIES OF).

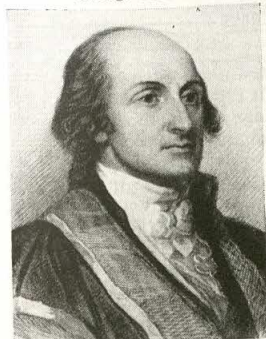
Jay was Secretary of Foreign Affairs from 1784 until

the government was reorganized under the Constitution. Washington then appointed him Chief Justice, and he served in this position from 1789 to 1795, resigning to become governor of New York. While Chief Justice, he went to England in 1794, and negotiated the Jay Treaty (see JAY TREATY).

Jay understood what was necessary to keep the nation going during its difficult early years, and had

John Jay

Chicago Historical Society



JAYNE, WILLIAM

the courage to make unpopular decisions. He perhaps lacked the qualities of greatness of Washington and Jefferson. But his quick mind and skill in diplomacy made him valuable to those leaders. JERRE S. WILLIAMS

JAY TREATY. The Treaty of Paris in 1783 ended the Revolutionary War, but it did not put an end to trouble between Great Britain and the United States. Neither country fully lived up to the terms of the treaty. For example, each country had agreed not to obstruct the collection of debts by citizens of the other country. But British subjects found themselves barred from collecting debts owed to them before the war. Britain also complained of the treatment of the Tories (British sympathizers) who had remained in America. Great Britain had agreed to give up its garrisons in various forts on the northwestern frontier, but it had not done so.

As time passed, Britain insisted on the right to stop and search American vessels for supposed deserters from the British Navy. After war broke out between England and France in 1793, the British even claimed the right to capture merchant vessels which were carrying provisions from the United States to France.

John Jay, Chief Justice of the United States, was named by President George Washington as a special ambassador to negotiate a treaty with Britain which would clear up the disputes. The treaty was signed in London on Nov. 19, 1794. It established reciprocal trading relations with certain restrictions, and Britain agreed to withdraw the garrisons from the northwestern frontier. But the treaty said nothing whatever about the question of the British right to stop and search American ships. The United States agreed that the debts owed to British merchants at the outbreak of the Revolution would be assumed by the federal government. The two governments agreed that joint commissions should settle the boundary disputes.

Publication of the Jay Treaty aroused intense anger in the United States. But the United States in 1794 was in no condition to fight a war, and Great Britain knew it. Jay had labored hard with Lord Grenville to get even the modest treaty he did obtain. Both Jay and President Washington were criticized severely, and Jay himself was even charged with having sold his country to England.

EUGENE C. BARKER

JAYCEE. See JUNIOR CHAMBER OF COMMERCE, U.S.
JAYHAWKER is a popular nickname for residents of Kansas. The origin of the word is uncertain. Some scholars believe that a party of gold seekers used the term during the California gold rush to refer to miners who traveled overland to California. Between 1854 and 1861, the name was applied to members of free-state armed bands who took part in the antislavery struggles on the Kansas-Missouri frontier. During the Civil War, the name referred loosely to all Union guerrilla bands in Kansas and Missouri, especially to the followers of Charles R. Jennison, who commanded the Seventh Kansas Cavalry. Many of Jennison's men were looters, arsonists, and murderers who preyed on neutral and pro-Southern inhabitants. For a time, the word *jayhawker* was an insult. DAVID DONALD

JAYHAWKER STATE. See KANSAS.

JAYNE, WILLIAM. See SOUTH DAKOTA (Famous South Dakotans).

JAZZ



Popsie

Geo. Hofer

The Original Dixieland Jazz Band made the first jazz phonograph record in 1917. The band did not really "create" jazz, as it claimed, but it influenced later musicians, such as clarinetist Benny Goodman, left, who won fame as "the King of Swing."

JAZZ is a kind of music that was born in the United States, probably toward the end of the 1800's. Today the best jazz is still played in America, but more and more musicians in other countries are learning how to play it.

Jazz has often been called the only art form to originate in the United States. It is mainly a music of so-called "low-brow" origin. That is, it was developed by people who, in the early days, had little or no formal training in music. But jazz has slowly risen to a much higher level. Today many classical musicians study jazz and some try to write it. Jazz musicians are better educated musically than ever before. Many of them, such as Benny Goodman, play classical music, too.

Almost all jazz is played in strict tempo, four beats to the bar (measure). Of course this is also true of *popular music*, the kind you hear on radio and television shows. But jazz has something extra and unique: *improvisation*. In a jazz performance, the musicians *improvise*. This means they play any notes they wish, as long as these notes sound right with the harmonic pattern, or chords, being played by the rhythm instruments (such as piano, guitar, and string bass).

The Growth of Jazz

How Jazz Began. No one really knows just where and when jazz was born. It was not born in any one particular city, although New Orleans, La., is sometimes called the cradle of jazz. During and after the Civil War, people played and sang simple melodies that

developed into the kind of tunes you can hear in both jazz and popular music today. Even further back, there had been certain rhythms that Negro slaves probably brought with them from Africa. By the middle of the 1800's, some of the elements that became a part of jazz could be heard in music played at Negro funerals, or strummed by slaves on battered banjos and guitars.

The quadrille, a dance imported from France, contained some of the themes that came to be used in early jazz, or *ragtime*, as it was first called. The melody that became famous as "Tiger Rag," a favorite jazz tune, is based on one of these quadrilles.

Jazz was probably played in the 1890's by Negro brass bands in street parades and funeral processions. We cannot judge how much the music of those days

JAZZ TERMS

Ball means a good time.

Blow means to play any instrument, even a piano.

Cat refers to any person, but especially a musician.

Combo is a small group of jazz musicians.

Cut means to play better than another musician.

Dig means to appreciate or understand.

Gig is a job (engagement) played by jazz musicians.

Hip means familiar with current jazz ideas.

Jam means to improvise.

Jam Session is an informal performance.

Riff is a musical phrase repeated many times.

Send means to excite the listener with a performance.

Square is an unsophisticated person.

sounded like jazz, because jazz did not appear on phonograph records until about 20 years later.

The early jazz bands usually included one or two cornets, a trombone, a clarinet, a banjo or guitar, a drum, and a string bass or tuba. The leaders of these bands in New Orleans included the cornetists Buddy Bolden, Bunk Johnson, and Freddie Keppard.

Although the jazz played in the 1890's was sometimes called ragtime, this term refers primarily to a type of piano music featuring lively rhythmic patterns. The early ragtime pianists included Scott Joplin, who wrote "Maple Leaf Rag," perhaps the greatest ragtime tune.

Along with the gay rags came the slow, mournful blues. Some notes of these blues songs (usually the third and seventh notes of the scale) are flatted. That is, they are played or sung a half note lower. This gives the tunes their melancholy sound. The best-known blues song is "St. Louis Blues," written in 1914 by W. C. Handy (1873-1958).

Many musicians developed jazz ideas while wandering up and down the East Coast and through the South and Middle West. One of the earliest was the pianist James P. Johnson, who made his professional debut in New York City in 1904. He influenced the work of Fats Waller, composer of "Honeysuckle Rose" and other jazz favorites. Jazz was spreading in many areas at the same time, although there was no means of communication except the wandering musicians themselves.

Just before and during World War I, many white musicians came to Chicago from the South. Five of them formed what eventually became known as the "Original Dixieland Jazz Band." They moved to New York and won fame there in 1917. That year they became the first jazz band to make phonograph records. Also

in 1917, Fate Marable, a pianist and bandleader, started taking young musicians on trips up the Mississippi River in bands that played on the riverboats.

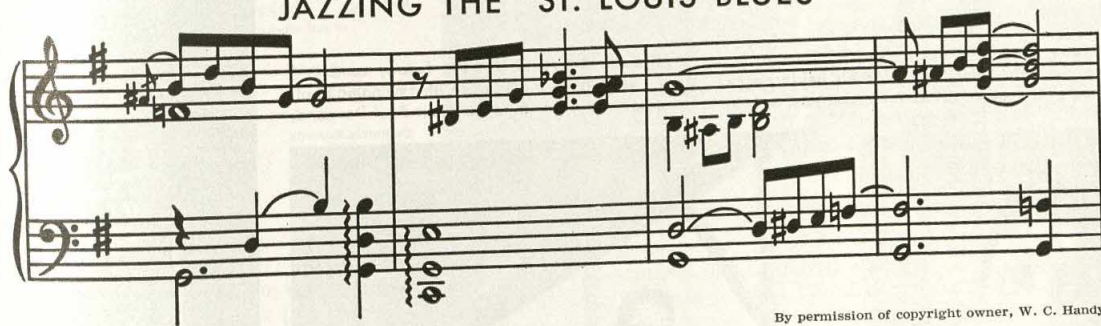
Jazz Grows Up. A 22-year-old trumpet player named Louis Armstrong moved from New Orleans to Chicago in 1922 to join the jazz band led by his childhood friend and early teacher, Joe "King" Oliver. Oliver's "Creole Jazz Band" became one of the groups that helped jazz spread during the 1920's with the help of phonograph records. Armstrong's powerful, driving trumpet style became known throughout the world. So did the cornet playing of Bix Beiderbecke, one of the few great white jazzmen of the period who learned enough from the Negro musicians to branch out with an individual style.

A group of Chicago youths, most of them from Austin High School, played a type of improvisation that came to be known as *Chicago style jazz*. They included Bud Freeman, tenor saxophone; Jimmy McPartland, cornet; Frank Teschemacher, clarinet; and Dave Tough, drums. Also in Chicago, 16-year-old Benny Goodman and his clarinet joined the veteran Ben Pollack's jazz band in 1926.

Jazz musicians began to learn more about reading and writing music. Expert musicians such as Duke Ellington and Fletcher Henderson arranged music for their own bands, but gave their musicians plenty of freedom to improvise when playing solos.

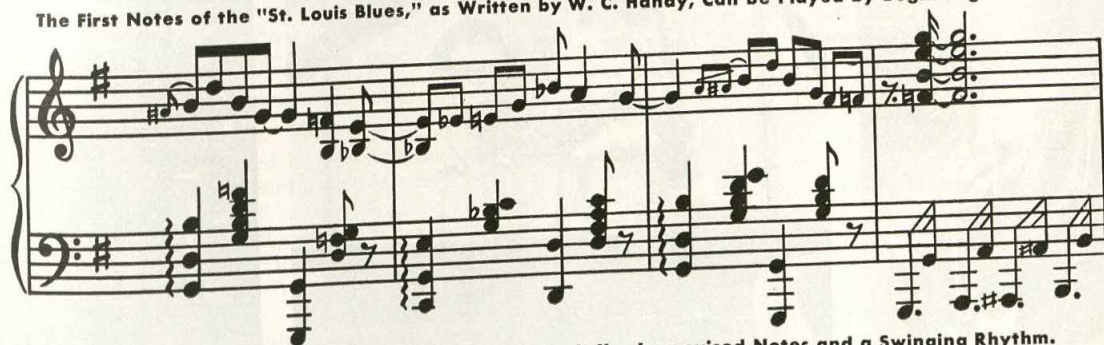
The Swing Era. Jazz took its next important step forward in 1935. Benny Goodman, playing his clarinet in front of a band that used many Fletcher Henderson arrangements, brought happy, swinging, big-band jazz to a nation-wide audience. This was the beginning of

JAZZING THE "ST. LOUIS BLUES"



By permission of copyright owner, W. C. Handy

The First Notes of the "St. Louis Blues," as Written by W. C. Handy, Can Be Played by Beginning Pianists.



A Jazz Version of the Same Music Is Harder to Play. It Has Improvised Notes and a Swinging Rhythm.



James Chapelle, from *The Story of Jazz*, Oxford University Press

Guitarist Huddie "Leadbelly" Ledbetter sang work blues that played an important part in the development of jazz.

Blues Singer Bessie Smith, famous for her mournful tunes, influenced Bix Beiderbecke and many other great American jazz artists.

George Hofer



Gerry Mulligan, right, gained national fame with a pianoless quartet that featured his baritone sax and Art Farmer on the trumpet.

Pianist Dave Brubeck, below, combined elements of classical music with a swinging beat, often working with saxophonist Paul Desmond.

Columbia Records



the "swing era." The best bands during these years included those of Count Basie, Bob Crosby, Jimmy Dorsey, Tommy Dorsey, Woody Herman, Jimmie Lunceford, and Artie Shaw. All these bands featured top jazz soloists. Most musicians believe that Duke Ellington had the finest band and soloists, and the most original compositions and arrangements.

Another jazz form that became popular during the late 1930's was *boogie woogie*, chiefly a piano style of jazz. Boogie woogie uses eight beats to the bar instead of the usual four, and features the traditional blues pattern for most of its themes. Pinetop Smith and Meade Lux Lewis were probably the most important boogie woogie artists.

Bop and Cool Jazz. In the early 1940's, several jazz musicians in New York City; Kansas City, Mo.; and other cities began to try out new harmonic ideas. They had great technical ability and keen ears. In improvising, they used more complicated chord patterns than the earlier jazz musicians did. They developed a style that came to be known as *bebop*, or *bop*. These men included Dizzy Gillespie, trumpet; Charlie Parker, alto saxophone; Bud Powell, piano; and Thelonious Monk, piano. Their contributions became an important element of jazz.

Later, in the 1950's, many musicians tried to develop other new ideas. Some of the bop musicians started playing in a relaxed style that came to be known as *cool jazz*, in contrast to the more robust style associated with traditional *hot jazz*. Some musicians, such as pianist Dave Brubeck, show their knowledge of classical studies when they improvise. But they are seldom able

Ted Williams





Popsie

Count Basie swings out with a jazz solo in his simple piano style. The driving rhythm of his playing has helped make his band a favorite among jazz audiences everywhere.

Louis Armstrong reaches for a high note on his blazing trumpet. Asked to define jazz, Armstrong once replied: "If you have to ask what it is, you'll never know."



Zinn Arthur

to improve on the piano jazz of men such as Art Tatum and Bud Powell. Similarly, Stan Kenton has sometimes used as many as 40 men in his orchestra and has played elaborate works that were praised by critics of classical music. But, among musicians and jazz critics, the most popular band is probably Count Basie's. The Basie band has the swinging rhythm that is still one of the most essential elements of all great jazz.

Famous Jazz Musicians

Armstrong, "Satchmo," Louis (1900-), born in New Orleans. He learned to play the trumpet in the city's Waifs' Home. Armstrong won international fame, both as a trumpeter and as a singer, through phonograph records made in the late 1920's with his band, called the "Hot Five." He became the most-imitated jazz soloist and the best-known personality in the history of jazz.

Basie, "Count," William (1904-), born in Red Bank, N.J. His swing band won fame in the 1930's with

several fine jazz soloists and his own simple piano style.

Beiderbecke, "Bix," Leon B. (1903-1931), born in Davenport, Ia. He played with the "Wolverines" and the bands of Frankie Trumbauer, Jean Goldkette, and Paul Whiteman. His pure, clean cornet style and keen harmonic sense were years ahead of their time. He was also a fine pianist and composer.

Ellington, "Duke," Edward K. (1899-), born in Washington, D.C. He won world-wide fame when his band played at the Cotton Club in New York City in the late 1920's. Ellington became one of the most important creative figures in jazz as a composer, arranger, band-leader, and pianist.

Gillespie, "Dizzy," John B. (1917-), born in Cheraw, S.C. His original trumpet style played a leading part in the creation of bop. In 1956 he became the first jazz musician to take his band on an overseas tour sponsored by the United States Department of State.

Goodman, "Benny," Benjamin D. (1909-), born in Chicago. He learned to play the clarinet at Hull-



Dizzy Gillespie Leads a Group of "Cool" Jazz Musicians in a Jam Session as He Plays Bop on His Trumpet.

Courtesy Life Magazine, © Time, Inc., 1948

House, and joined Ben Pollack's band at the age of 16. Goodman formed his own band in 1934, and became nationally famous the next year by launching the swing era with his peerless clarinet style and exciting arrangements. He also recorded many classical works.

Hawkins, Coleman (1904-), born in St. Joseph, Mo. He played with Fletcher Henderson's band from 1924 to 1934. Hawkins made the tenor saxophone a popular instrument by inspiring other musicians to imitate his style. His solo record of "Body and Soul" is a jazz classic.

Henderson, "Smack," Fletcher (1898-1952), born in Cuthbert, Ga. He led his own band during the 1920's and 1930's, but gained his greatest fame as chief arranger for Benny Goodman's band.

Herman, "Woody," Woodrow C. (1913-), born in Milwaukee, Wis. He entered show business at the age of 6, playing the sax and clarinet, and singing. His band, formed in 1936, produced many important big-band developments of the 1940's.

Hines, "Fatha," Earl (1903-), born in Duquesne, Pa. He developed his "trumpet-style" piano solos while playing with Louis Armstrong and with his own band in the 1920's. This style, featuring hard-hit octaves played by the right hand, influenced many great jazz pianists, such as Jess Stacy and Joe Sullivan.

Parker, "Bird," Charles (1920-1955), born in Kansas City, Mo. He became famous for his recordings with Dizzy Gillespie, and for his technique and originality on the alto saxophone. A cofounder with Gillespie of the bop movement, Parker became one of the most imitated musicians of the 1940's and 1950's.

Smith, Bessie (c. 1900-1937), born in Chattanooga, Tenn. She gained fame, after her death, through her blues records. Few persons recognized her as a great

jazz artist during her lifetime, when she sang mainly to vaudeville audiences. The mournful recordings of "The Empress of the Blues" became among the most famous in jazz history.

Tatum, "Art," Arthur (1910-1956), born in Toledo, O. Tatum was almost blind from birth. His technique, light touch, and endless flow of ideas made him one of the most admired jazz pianists of all time.

Teagarden, "Jack," Weldon J. (1905-), born in Vernon, Tex. He taught himself to play the trombone. Teagarden recorded with hundreds of outstanding jazz musicians, including Louis Armstrong and Red Nichols. He became a powerful influence with his original trombone style and carefree singing.

Tristano, "Lennie," Leonard J. (1919-), born in Chicago. Blind since the age of 9, he led a group of musicians who created new harmonic ideas in jazz. As a pianist and as a composer, Tristano was among the most progressive jazz figures in the 1950's. LEONARD FEATHER

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Drum	Guitar	Ragtime	Whiteman,
	Music	Saxophone	Paul

Outline

- I. The Growth of Jazz
 - A. How Jazz Began
 - B. Jazz Grows Up
 - C. The Swing Era
 - D. Bop and Cool Jazz
- II. Famous Jazz Musicians

Questions

What is ragtime? Cool jazz? Improvisation? Where was jazz born? When? How did Benny Goodman contribute to jazz? Louis Armstrong? Bessie Smith? Duke Ellington?

JAZZ AGE. See UNITED STATES, HISTORY OF (The Roaring 20's).

JEAN BAPTISTE DE LA SALLE, SAINT (1651-1719), a French priest, helped found a teaching order, the Institute of the Brothers of Christian Schools. He provided free education for poor children. He felt religion ought to direct and inspire this education. He also thought his teachers ought to belong to a religious community, and organized teachers' training schools. In 1900, La Salle was canonized. He was born in Reims, France.

MATTHEW A. FITZSIMONS and FULTON J. SHEEN

JEAN PAUL. See RICHTER, JOHANN PAUL FRIEDRICH.

JEAN VALJEAN. See LES MISÉRABLES.

JEANES FUND. See SOUTHERN EDUCATION FOUNDATION.

JEANNE D'ARC. See JOAN OF ARC, SAINT.

JEANNERET, CHARLES ÉDOUARD. See LE CORBUSIER.

JEANS, SIR JAMES HOPWOOD (1877-1946), contributed to the understanding of the behavior of molecules, especially to the kinetic theory of gases (see GAS). He also suggested a theory of the creation of the universe. He became known for interpreting the results of scientific research in a clear and beautiful style. He wrote *The Dynamic Theory of Gases* (1904) and *Problems of Cosmogony and Stellar Dynamics* (1919). Jeans was born in London, and was graduated from Cambridge University.

HELEN WRIGHT

JEEP is an all-purpose vehicle first used by the United States armed forces, and now also used by civilians. It is smaller than the so-called "command" car but larger than a sidecar motorcycle.

Jeep became a slang term for the truck's official name, *General Purpose* vehicle. It has a 60-horsepower motor with four cylinders, and is 11 feet long, 40 inches high, and 62 inches wide. A jeep can carry as many as six persons and can run 65 mph. Built with both a four-wheel and a two-wheel drive, a jeep can pull anti-tank guns and howitzers or haul as much as a half-ton load.

A jeep can move rapidly through mud and water and can bounce over uneven ground without turning over. It can be used to pump water and air, and to provide power for road scrapers and other devices.

In 1958, English engineers developed a folding jeep that can be parachuted or shipped easily.

When capitalized, the word *Jeep* is a trademark for the civilian automotive vehicle.

FRANKLIN M. RECK

JEFFERSON, STATE OF

JEFFERS, ROBINSON

(1887-1962), an American poet, wrote story and lyric poems which are dark with a pessimism about the value of human individuality. His books include *Tamar and Other Poems* (1925), *Roan Stallion* (1926), *Dear Judas and Other Poems* (1929), *Thurso's Landing and Other Poems* (1932), and *Give Your Heart to the Hawks* (1934). *Selected Poetry* (1938) contains 600 pages of his fierce seeking for values in experience. *The Double Axe* (1948) and *Hungerfield* (1954) prolong this search.



Historical Pictures Service
Robinson Jeffers

Jeffers treated ancient Greek tragedies in some of his long poems, and adapted them to the stage. His *Medea* starred Judith Anderson in 1947. He wrote *The Cretan Woman* from Euripides' *Hippolytus*. Jeffers received the 1960 Shelley Memorial award presented by the Poetry Society of America. He was born JOHN ROBINSON JEFFERS in Pittsburgh, Pa., and was graduated from Occidental College in Los Angeles. After world travel, he settled in Carmel, Calif., in 1914. This area furnished the setting for much of his poetry.

JOHN HOLMES

JEFFERSON, JOSEPH (1829-1905), an American comedian, became one of the most beloved figures in the American theater. One of his best-known parts was Rip Van Winkle, in a dramatization of Washington Irving's famous story. Audiences never tired of seeing Jefferson as Rip, and he played the part for 40 years. Jefferson was born in Philadelphia.

WILLIAM VAN LENNEP

See also KELLER, HELEN (picture); RIP VAN WINKLE.

JEFFERSON, STATE OF. In 1915 it was proposed in the Texas legislature that a separate state be made of the Panhandle, or northwestern part of the state. This new state was to be known as the State of Jefferson. The proposal was discussed but did not become law. It disclosed that the law which admitted Texas to the Union gave the state the right to divide itself.

U.S. Army

The **Jeep** is one of the most useful vehicles of the United States armed forces. It combines the strength and ruggedness of a truck with the driving ease and speed of a light car. Jeeps became famous in World War II because they could be used for so many different tasks.



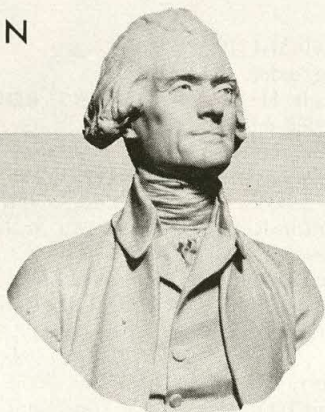
THOMAS JEFFERSON



WASHINGTON
1st President
1789—1797



J. ADAMS
2nd President
1797—1801



MADISON
4th President
1809—1817



MONROE
5th President
1817—1825

3RD PRESIDENT OF THE UNITED STATES 1801-1809

Sculpture by Jean Houdon, New-York Historical Society

JEFFERSON, THOMAS (1743-1826), is best remembered as a great President and as the author of the Declaration of Independence. He also won lasting fame as a diplomat, a political thinker, and a founder of the Democratic party.

Jefferson's interests and talents covered an amazing range. He became the foremost American architect of his time. He designed the Virginia Capitol, the University of Virginia, and his own home, Monticello. As a scientific farmer, he cultivated the finest gardens in America. His many inventions included the swivel chair and the dumb-waiter. Jefferson's excellent library became the nucleus of the Library of Congress. He drafted Virginia's civil code, and founded its state university. He devised the convenient decimal system of coinage that allows Americans to keep accounts in dollars and cents. He also found time to write a *Manual of Parliamentary Practice*, to prepare written vocabularies of Indian languages, and to play the violin in chamber music concerts.

Jefferson regarded himself as a public-spirited citizen and a broad-minded, practical thinker, rather than as a professional politician. He once wrote: "I had rather be shut up in a very modest cottage, with my books, my family and a few old friends, dining on simple bacon, and letting the world roll on as it liked than to occupy the most splendid post which any human power can give." Yet his country needed his talents, and he contributed them. Jefferson cherished liberty in every form, and was largely responsible for the Bill of Rights that guarantees the basic American freedoms.

The tall, red-haired Virginian believed that "those who labor in the earth are the chosen people of God." The term *Jeffersonian Democracy* refers to his ideal of a nation of landowning farmers living under as little government as possible.

Jefferson molded the American spirit and mind. Every later generation has turned to him for inspiration. Through 60 years of public service, he remained faithful to his vow of "eternal hostility against every form of tyranny over the mind of man."

During Jefferson's two terms as President, the United States doubled in area with the purchase of the vast Louisiana Territory. America preserved its hard-won neutrality while Napoleon's armies battled most of

Europe. Congress passed a law banning the slave trade. A trip from New York City to Philadelphia took two days by stagecoach. But the first successful voyage of Robert Fulton's steamboat, the *Clermont*, signaled a new era in transportation. Washington Irving, one of the first American authors to gain recognition abroad, was writing his *Knickerbocker's History of New York*. And Noah Webster published his first dictionary.

Early Life

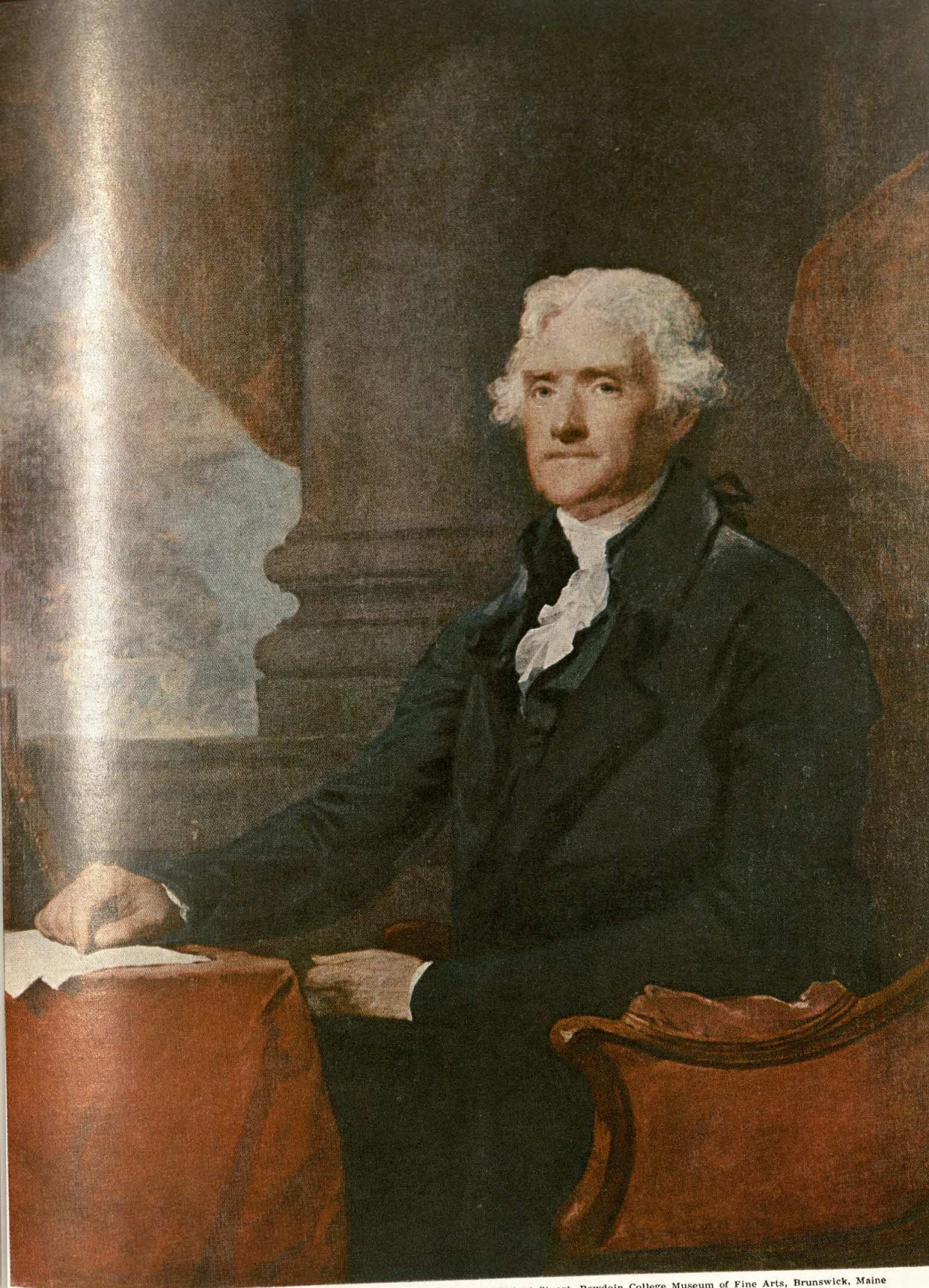
Boyhood. Thomas Jefferson was born on April 13, 1743, at Shadwell, the family farm in Albemarle County, Virginia. (The date was April 2 by the calendar then in use.) He was the third child in a family of six sisters and four brothers. His father, Peter Jefferson, had served as surveyor, sheriff, colonel of militia, and member of the House of Burgesses (see HOUSE OF BURGESSES). Thomas' mother, Jane Randolph Jefferson, came from one of the oldest families in Virginia.

Thomas grew up with the normal interests of a country boy—hunting, fishing, horseback riding, and canoeing. His father taught him to read and write, and to keep the farm accounts. The youth also learned to play the violin and to love music.

Jefferson was 14 years old when his father died. As the oldest son, he became head of the family. He inherited Shadwell with its 30 slaves and more than 2,500 acres of land. Jefferson's guardian, John Harvey, managed the estate.

Education. Jefferson began his studies in local schools. At the age of 9, he went to live with a nearby Scottish clergyman, who taught him Latin, Greek, and French. After his father died, he entered the school of the Reverend James Maury, near Charlottesville.

In 1760, when he was 16, Jefferson entered the College of William and Mary at Williamsburg. The town had a population of only about 1,000. But, as the provincial capital, it had a gay social life. Here young Jefferson met two men who had a great influence on him. They were William Small and Judge George Wythe. Small was a professor of mathematics at the college. "From his conversation," Jefferson later recalled, "I got my first views of the expansion of science and of the system of things in which we are placed." Small introduced his eager young disciple to Wythe, one of the



Portrait by Gilbert Stuart, Bowdoin College Museum of Fine Arts, Brunswick, Maine



Jefferson Birthplace Memorial Park Commission

JEFFERSON AS A BOY

Shadwell, Jefferson's Birthplace, stood in Albemarle County, Virginia. The farmhouse was built in the style of the Piedmont Virginia house shown in the drawing, left.



Young Thomas enjoyed hunting, fishing, horseback riding, and canoeing. He also learned to play the violin.



IMPORTANT DATES IN JEFFERSON'S LIFE

- 1743** (April 13) Born in Albemarle County, Virginia.
- 1772** (Jan. 1) Married Martha Wayles Skelton.
- 1776** Wrote the Declaration of Independence.
- 1779** Elected governor of Virginia.
- 1782** Mrs. Martha Jefferson died.
- 1785** Appointed minister to France.
- 1789** Became Secretary of State.
- 1796** Elected Vice-President of the United States.
- 1800** Elected President of the United States.
- 1819** Founded the University of Virginia.
- 1826** (July 4) Died at Monticello, his Virginia home.

most learned judges in the province (see WYTHE, GEORGE).

Through Small and Wythe, Jefferson became friendly with Governor Francis Fauquier. The four spent many evenings at the governor's mansion, talking and playing chamber music. Jefferson felt that "... to the habitual conversation on these occasions I owed much instruction." The young student also met Patrick Henry.

Jefferson spent two years at William and Mary. His studies and the companionship of cultured men stimulated his eager mind. He formed many of his basic ideas about man and God. Jefferson had been reared in the Anglican Church, but he developed a distrust of organized religion. His views resembled those of the Unitarians. In his old age, he wrote: "To love God with all thy heart and thy neighbor as thyself is the sum of religion."

Lawyer. After graduation from college in 1762, Jefferson studied law with Judge Wythe. He watched with concern as tension grew between the American colonies and Great Britain. In 1765, Jefferson heard Patrick Henry give his famous speech against the Stamp Act.

Jefferson was admitted to the bar in 1767. He practiced law with great success until public service began taking all his time. He divided his time between Williamsburg and Shadwell. At Shadwell he designed and supervised the building of his own home, Monticello, on a nearby hill (see MONTICELLO).

Jefferson's estate, like that of his father, lay in the rolling hills of Virginia's Piedmont region. The Scotch-Irish and German immigrants of this section had hacked their small farms out of the wilderness. Their ideas conflicted with the aristocratic beliefs of the wealthy landowners of the Tidewater region. Jefferson was related to many Tidewater aristocrats and was accepted in their society. But his political sympathies tended to be closer to those of his Piedmont neighbors.

Jefferson's Family. In 1772, Jefferson married Martha Wayles Skelton (Oct. 19, 1748-Sept. 6, 1782), a widow. She was the daughter of John Wayles, a promi-

nent lawyer who lived near Richmond. According to legend, Jefferson's love of music helped him win his bride. Two rival suitors came to call one day, but left without a word when they saw the couple playing a duet on the harpsichord and violin.

The Jeffersons settled at Monticello, which was not yet completed. They had one son and five daughters, but only two children lived to maturity—Martha (1772-1836) and Mary (1778-1804). Mrs. Jefferson died in 1782, after only 10 years of marriage. Jefferson reared his two daughters. He never remarried.

Colonial Statesman

Revolutionary Leader. Jefferson was elected to the House of Burgesses in 1769, and served there until 1775. He was not a brilliant speaker, but proved himself an able writer of laws and resolutions. Jefferson often showed a talent for clear and simple English that the more experienced legislators quickly recognized.

Jefferson became a member of the group that included Patrick Henry, Richard Henry Lee, and Francis Lightfoot Lee. These men challenged the control which Tidewater aristocrats held over Virginia politics. They also took an active part in the disputes between the colonies and Great Britain. Together with other patriots, they met in the Apollo Room of Williamsburg's famous Raleigh Tavern in 1769, and formed a nonimportation association against Britain. The group protested the import duties set up by the Townshend Acts (see REVOLUTIONARY WAR IN AMERICA [The Townshend Acts]).

After a brief lull, the controversy flared up again in 1774. Jefferson took the lead in organizing another nonimportation agreement. He also called for a meeting of all the colonies to consider their grievances. Jefferson was chosen to represent Albemarle County at the First Virginia Convention, which in turn was to elect Virginia delegates to the First Continental Congress. He became ill and could not attend the meeting, but he forwarded a paper giving his views of the crisis.

Jefferson argued that Parliament had no control over the American colonies. He declared that when the origi-



Author of the Declaration of Independence. Jefferson wrote this famous document in 1776.

JEFFERSON THE STATESMAN



Minister to France. Jefferson succeeded Benjamin Franklin, above right, in this key diplomatic post.



American Museum of Natural History

Secretary of State. Jefferson, second from left, served in the first Cabinet of President George Washington.

nal settlers came to America, they had used their "natural rights" to emigrate. Jefferson claimed that the colonies still owed allegiance only to the king, to whom the original settlers had freely chosen to remain loyal. Jefferson said the first Englishmen who came to America were like the first Saxons who had settled in England hundreds of years before. The Saxons had come from the area of present-day Germany. Jefferson claimed that the English Parliament did not have any more right to govern America than the German rulers had to govern England. Most Virginians at the convention found Jefferson's views too extreme. But his views, supported by able legalistic argument, were printed in 1774 in a pamphlet called "A Summary View of the Rights of British America."

Jefferson attended the Second Virginia Convention in the spring of 1775. The members of this convention chose Jefferson as one of the delegates to the Second Continental Congress. The convention also asked him to answer a message of peace from Lord North, the British prime minister. North had proposed that Parliament would not try to tax the settlers if they would tax themselves. Jefferson's "Reply to Lord North" was more moderate than the "Summary View." But he rejected North's proposals. Jefferson insisted that a government had been set up in America for the colonists, not for the English. The Continental Congress approved Jefferson's letter to North.

The Declaration of Independence. Jefferson took a leading part in the Continental Congress. After the Revolutionary War began, he was asked to draft a "Declaration of the Causes and Necessity of Taking up Arms." The Congress found this declaration "too strong," and the more moderate John Dickinson drafted a substitute. It included much of Jefferson's original version.

During the spring of 1776, sentiment rapidly grew stronger in favor of independence. On June 7, Richard Henry Lee of Virginia introduced his famous resolution that "these United Colonies are, and of right ought to be, free and independent States." Congress appointed a committee to draw up a declaration of independence. On the committee were Jefferson, John Adams, Benja-

min Franklin, Roger Sherman, and Robert Livingston. The committee unanimously asked Jefferson to prepare the draft, and approved it with few changes. Congress began debating the declaration on June 28, and adopted it on July 4. The Congressmen made some changes, but, as Richard Lee said: "the Thing in its nature is so good that no cookery can spoil the dish for the palates of freemen."

The Declaration of Independence remains Jefferson's best known work. It set forth with moving eloquence, supported by strong legal argument, the position of the American Revolutionaries. It affirmed belief in representative government under a constitution. Few of the ideas were new. Jefferson said his object was "to place before mankind the common sense of the subject, in terms so plain and firm as to command their assent . . . Neither aiming at originality of principle or sentiment, nor yet copied from any particular and previous writing, it was intended to be an expression of the American mind . . ." For a complete description of the Declaration, see DECLARATION OF INDEPENDENCE.

Virginia Lawmaker. In September, 1776, Jefferson resigned from Congress and returned to the Virginia House of Delegates. He had no interest in military life and did not fight in the Revolutionary War. He felt that he could be more useful in Virginia as a lawmaker. His first moves toward social reform involved land distribution. A few wealthy slaveholders controlled Virginia. The people in this largest colony suffered from uneven distribution of land. The colonial government closely restricted voting privileges and limited educational opportunities. In practice, a great deal of religious tolerance existed. But the Anglican Church was established by law.

Jefferson sponsored a bill abolishing *entail*, which requires a property owner to leave his land to a specified descendant, rather than disposing of it as he wishes (see ENTAIL). Jefferson then succeeded in outlawing *primogeniture*, whereby all land passes to the eldest son (see PRIMOGENITURE). Without entail and primogeniture, great estates could be broken up. Jefferson described the purposes of land reform when he wrote:

JEFFERSON, THOMAS

"instead of an aristocracy of wealth . . . to make an opening for the aristocracy of virtue and talent."

At this time in Virginia, only persons who owned land could vote. After large estates were broken up, more people owned property. As a result, more people could vote. The legislature passed another bill introduced by Jefferson providing that immigrants could become naturalized after living in Virginia for two years.

Even more important were Jefferson's bills designed to assure religious toleration and to abolish the special privileges of the Anglican Church in Virginia. Jefferson aroused hostility not only among Anglicans, but also among other denominations, which feared that a separation of church and state would loosen all religious ties. Virginia disestablished the Anglican Church in 1776. It took the church's clergymen off the public payroll and exempted Virginians from paying taxes to support the church. Ten years later, when Jefferson was in France, the assembly passed his Statute of Religious Freedom, which guaranteed religious liberty in Virginia. Jefferson regarded this action so important that he mentioned it in the epitaph which he wrote for himself. The epitaph reads: "Here was buried Thomas Jefferson, author of the Declaration of American Independence, of the statute of Virginia for religious freedom, and father of the University of Virginia."

Jefferson also worked to revise Virginia's legal system. He pushed through many reforms, especially in the land law and the criminal law. The legislature defeated his elaborate plan for a system of free public education with a state-supported university, but parts of this plan later became law.

Governor. The Virginia Assembly elected Jefferson governor for one-year terms in 1779 and 1780. During his administration, the state suffered severely from the effects of the Revolutionary War. At the request of General George Washington, Jefferson had stripped Virginia of its defenses in order to aid the American army. Among those who recruited Virginians for military service was James Monroe. Jefferson and Monroe formed a lasting friendship.

British troops under Benedict Arnold and Lord Cornwallis invaded Virginia in 1781. The state could put up little resistance. Jefferson himself barely escaped capture when Banastre Tarleton's raiders swept down on Monticello. His term ended shortly afterward, and the legislature re-elected him. But he declined the post because he felt it should be held by a military man.

Jefferson was widely criticized for fleeing from the British and resigning as governor before the assembly had elected a successor. An investigation by a committee of the House of Delegates cleared Jefferson of blame. But many years passed before he regained prestige in his own state. The attacks wounded him deeply, and he left public office with genuine relief.

Congressman. Jefferson returned to Monticello embittered and determined to give up public life forever. He soon began writing his *Notes on Virginia*. This book included much information on Virginia, and on his own beliefs and ideals.

The death of Jefferson's wife in September, 1782, left him stunned and distraught. For several months he spoke to few persons and wrote to none. His daughter

Martha wrote many years later: ". . . the violence of his emotion . . . to this day I dare not describe to myself." Jefferson supposedly had promised his dying wife that he would never marry again. In referring to his wife's death, Jefferson told a friend that "A single event wiped out all my plans and left me a blank which I had not the spirits to fill up."

Jefferson's countrymen elected him to Congress in 1783. He accepted the office because he felt it would take his mind off his personal tragedy. During his year in Congress he served as chairman of several committees. He devised a decimal system of currency that was approved by Congress. He also piloted through Congress the Treaty of Paris, which ended the Revolutionary War. Most important was Jefferson's work on the Ordinance of 1784 and the Land Ordinance of 1785. These measures formed the basis for all later American land policies.

The problem of western lands had troubled the colonies from the beginning of the Revolutionary War. Several colonies claimed land west of the Appalachian Mountains. Virginia, under Jefferson's leadership, gave up its western claims in 1783. Other states followed, and the Northwest Territory was created (see NORTHWEST TERRITORY). Two problems then arose—how to govern this area, and how to dispose of the land itself. Congress appointed two committees to consider the issues, and made Jefferson chairman of both. In 1784, Jefferson submitted a draft of an ordinance for the political organization of the Northwest Territory. It would have divided the entire region into 14 states. Each would eventually be admitted to the Union on a basis of complete equality with the original 13 states. Jefferson's provision forbidding slavery west of the Appalachians lost by a single vote. The Ordinance of 1784 never went into effect, but it furnished the basis for the Northwest Ordinance of 1787 (see NORTHWEST ORDINANCE).

Minister to France. In May, 1784, Congress sent Jefferson to France to join John Adams and Benjamin Franklin in negotiating European treaties of commerce. The next year Franklin resigned as minister to France and Jefferson succeeded him in Paris. "It is you, sir, who replace Franklin?" he was asked. "No, sir, I succeed him; no one can replace him," Jefferson replied. Yet Jefferson came as close as anyone could to replacing the honored Franklin. The United States was suffering from a weak central authority under the Articles of Confederation. Jefferson found himself seriously handicapped by what he described as "the nonpayment of our debts and the want of energy in our government." But he did work out several commercial agreements.

At this time, revolution was approaching in France. French reformers regarded Jefferson as a champion of liberty, because of his political writings and his legal reforms in Virginia. The Marquis de Lafayette, who had fought for American independence, and other moderates often sought his advice. Jefferson tried to keep out of French politics. But he did draft a proposed Charter of Rights to be presented to the king. This document and his other suggestions urged moderation, because Jefferson felt that the French were not yet ready for a representative government of the American type. Jefferson was in Paris at the beginning of the French Revolution. He sympathized with the revolution, feeling it was similar in purpose to the American Revolution.

Jefferson had taken his daughter Martha to France with him, and Mary joined them in 1787. Both girls attended a convent school in Paris. Jefferson traveled widely in Europe. He broadened his knowledge of many subjects, especially architecture and farming. He applied for a leave in 1789 and sailed for home in October. He wanted to settle his affairs in America and to take his daughters back home. Jefferson expected to return to represent the United States in France.

National Statesman

During Jefferson's stay in France, Americans at home were busy reorganizing the government. Statesmen assembled in a convention in 1787 and drew up a new constitution. Jefferson's friend James Madison sent him a draft, which he approved. But he objected strongly to the lack of a bill of rights, and wrote letters urging one. As a result, Madison introduced the 10 amendments that became the Bill of Rights. See **BILL OF RIGHTS**.

Secretary of State. Jefferson arrived in the United States in November, 1789. A letter from President George Washington awaited him, asking Jefferson to be Secretary of State in the new government. Jefferson received this invitation "with real regret," but he finally yielded to Washington's urging.

Jefferson and Hamilton. Sharp differences of opinion soon arose between Jefferson and Secretary of the Treasury Alexander Hamilton. Hamilton, 14 years younger than Jefferson, had gained prominence as a spokesman for the Constitution. Although of humble origin, the New Yorker distrusted the common people. He believed that the country would be best governed by an aristocracy of the rich and wellborn. Jefferson, with his faith in the people, disagreed with Hamilton.

Hamilton's financial program embodied many of his principles, and brought these differences into the open (see **HAMILTON, ALEXANDER** [His Policies]). Jefferson supported Hamilton's plan for assuming all the debts of the previous administrations. He reluctantly agreed that Congress should also pay the debts incurred by the states during the Revolutionary War. This proposal aroused Southern opposition. Most Southern States had paid their debts, and Southerners did not want to pay the debts of Northern States. Some Southern Congressmen agreed to vote for paying the state debts in return for having the national capital located in the South. Jefferson helped carry out this compromise, which was suggested by Hamilton.

But Jefferson opposed Hamilton's plans to encourage shipping and manufacturing. Jefferson wanted the United States to remain a nation of farmers. Hamilton's proposed national bank also alarmed Jefferson. He feared that such a bank would encourage financial speculation and hurt farming interests. Jefferson also thought it would give the government too much power. Washington asked his Cabinet to submit opinions on the constitutionality of a national bank. Jefferson developed his "strict construction" theory, which held that the government should assume only the powers expressly given it by the Constitution. Hamilton replied with his "loose" interpretation of the Constitution, declaring that the government could assume all powers not expressly denied it. Washington generally favored Hamilton in domestic affairs.

The differences between Jefferson and Hamilton

grew into a bitter personal feud. Neither man believed in the honesty or good faith of the other. Hamilton went so far as to call Jefferson a "contemptible hypocrite." Their conflicting points of view led to the development of the first political parties. The Federalists adopted Hamilton's principles. Jefferson led the Democratic-Republicans (called *Republicans* at the time, though later to become the *Democratic* party). See **FEDERALIST PARTY**; **DEMOCRATIC-REPUBLICAN PARTY**.

Foreign Affairs. Washington supported most of Jefferson's policies in foreign relations. Jefferson urged recognition of the new revolutionary government of France. But he reluctantly supported Washington's proclamation of neutrality, and agreed on demanding the recall of Citizen Genêt (see **GENÊT, EDMOND C. É.**). Jefferson tried to persuade the British to abandon their forts in the Northwest Territory. He also worked for free navigation of the Mississippi River. For a fuller description of this period, see **WASHINGTON, GEORGE**.

Vice-President. Jefferson joined his fellow Cabinet members in urging Washington to accept a second term as President. But he himself was heartily weary of office, and wanted to escape the "hated occupation of politics." Jefferson finally persuaded Washington to accept his resignation. In December, 1793, Jefferson returned to Monticello. He hoped to find happiness "in the society of my neighbors and my books, in the wholesome occupations of my farm and my affairs . . . owing account to myself alone of my hours and actions."

But a life of this kind did not last long. By late 1796, Jefferson had become concerned with what he felt were the centralizing tendencies of the government. He accepted the Democratic-Republican nomination for President in 1796, and ran against John Adams, the Federalist candidate. Adams, with 71 electoral votes, was elected President. Jefferson received 68 electoral votes, the second largest number. By the law of the time, he became Vice-President.

Jefferson took no active part in the new administration because it was largely Federalist. As leader of the opposition, he strengthened the organization of the Democratic-Republican party. His chief support came from small farmers, frontiersmen, and Northern laborers. Relations between him and Adams grew more and more strained, until the men broke completely in 1800.

Jefferson presided over the Senate with dignity and skill. To aid deliberations, he wrote his famous *Manual of Parliamentary Practice*, which is still in use.

In 1798, the XYZ Affair aroused great hostility to France (see **XYZ AFFAIR**). War hysteria led the Federalists to pass the Alien and Sedition Acts (see **ALIEN AND SEDITION ACTS**). These laws in effect deprived the Democratic-Republicans of freedom of speech and of the press. They aroused much opposition, and Jefferson led the attack against them. He prepared a series of resolutions which were passed by the Kentucky legislature, and his friend Madison prepared a similar resolution for Virginia. These Kentucky and Virginia Resolutions set forth the "compact" theory of the Union and asserted the right of the states to judge when this compact had been broken. They were later used by advocates of nullification and secession. See **KENTUCKY AND VIRGINIA RESOLUTIONS**; **NULLIFICATION**.

Election of 1800. The Republicans again nominated Jefferson for President in 1800, and named former Senator Aaron Burr of New York for Vice-President. The Federalist party renominated President Adams, and chose diplomat Charles C. Pinckney of South Carolina as his running mate. The Federalists warned Americans that Jefferson was a revolutionary, an anarchist, and an unbeliever. One Connecticut clergyman wrote: "I do not believe that the Most High will permit a howling atheist to sit at the head of this nation." The Federalists were divided among themselves. Hamilton had quarreled with Adams, and wrote a pamphlet attacking him. This party quarrel helped the Democratic-Republicans, as did the unpopular Alien and Sedition Acts.

Jefferson won the presidency by receiving 73 electoral votes to 65 for Adams. His followers celebrated with bonfires and patriotic speeches. But their spirits fell when they learned that each Republican elector had cast one vote for Jefferson and the other for Burr. Although they had clearly intended to elect Jefferson to the presidency and Burr to the vice-presidency, the result was a tie. Burr was technically also a candidate for President according to the voting procedures of the time. He failed to withdraw his name as a presidential candidate, and the House of Representatives had to settle the election.

The Federalists still controlled the House, because the newly elected Democratic-Republican Congress had not yet taken office. Many Federalist Congressmen preferred Burr to Jefferson, because they thought Burr would be more manageable. But Hamilton distrusted Burr even more than he did Jefferson. He threw his influence to the support of Jefferson, who won election on the 36th ballot. Burr became Vice-President.

This election led to an amendment to the Constitution by which each elector in the Electoral College casts one vote for President and one for Vice-President (see UNITED STATES CONSTITUTION [Amendment 12]).

Jefferson's First Administration (1801-1805)

The election of 1800, Jefferson insisted, "was as real a revolution in the principles of our government as that of 1776 was in its form." He felt that the Democratic-Republican victory after 12 years of Federalism would save the nation from tyranny.

Jefferson spoke more moderately in his inaugural address than he did during the political campaign. He was the first President to be inaugurated in Washington. Jefferson declared in his speech that "every difference of opinion is not a difference of principle. We have called by different names brethren of the same principle. We are all republicans—we are all federalists." Actually, the government continued much as before. Within a short time, the Democratic-Republicans had adopted, or at least accepted, many Federalist ideas.

Jefferson, a poor public speaker, was the first President to send his annual message to Congress, rather than deliver it in person. Later Presidents followed this procedure until, more than a hundred years later, Woodrow Wilson resumed the practice of appearing before Congress.

Life in the White House. The so-called "President's House" was only partly built when Jefferson moved in. He felt somewhat lonely in what he described as "a great stone house, big enough for two emperors, one

WORLD EVENTS

- 1803 John Dalton proposed his atomic theory of matter.
- 1804 Napoleon crowned himself Emperor of the French.
- 1804 Richard Trevithick of Great Britain invented the steam locomotive.
- 1807 Great Britain abolished the slave trade throughout the colonies.



UNITED STATES EVENTS

Ohio became a state in 1803. Congress organized the following territories: Orleans in 1804, Louisiana in 1805, Michigan in 1805, and Illinois in 1809. U.S. population was 7,040,000 in 1809.



The United States Flag had 15 stars throughout Jefferson's term of office.

- 1802 Congress established the United States Military Academy at West Point, N.Y.
- 1803 The United States purchased the Louisiana Territory from France for about \$15,000,000.
- 1803 Chief Justice John Marshall established the Supreme Court's power of judicial review.
- 1806 Zebulon M. Pike explored the Rocky Mountains and sighted Pikes Peak.
- 1807 Congress passed the Embargo Act, forbidding U.S. ships to carry goods to other nations.
- 1808 Congress prohibited the importation of African slaves into the United States.

pope and the grand lama." He kept a pet mockingbird for company. Jefferson's wife had been dead for 19 years when he became President. His daughters, Mrs. Martha Randolph and Mrs. Mary Eppes, served as hostesses from time to time, although they did not live permanently in Washington. Jefferson's most popular hostess was Dolley Madison, the wife of his Secretary of State. Jefferson's grandson, James Randolph, was the first child born in the White House.

Jefferson kept a French steward and chef, but he tried to eliminate some of the formality in White House pro-

JEFFERSON'S CABINET

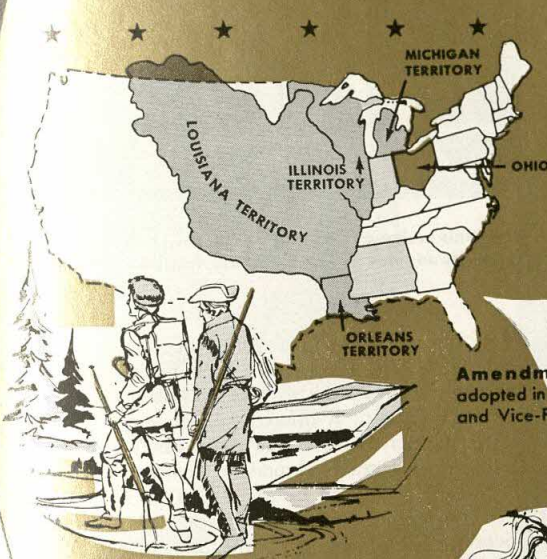
Secretary of State.....	*James Madison
Secretary of the Treasury.....	*Albert Gallatin
Secretary of War.....	*Henry Dearborn
Attorney General.....	Levi Lincoln
	John Breckinridge (1805)
	Caesar A. Rodney (1807)
Postmaster General.....	Gideon Granger
Secretary of the Navy.....	Robert Smith

*Has a separate biography in WORLD BOOK.

PRESIDENT JEFFERSON



The Napoleonic Wars Raged in Europe During Jefferson's Administration.



Lewis and Clark reached the Pacific Coast in 1805. Their expedition strengthened U.S. claims to the Oregon country.

Aaron Burr served as Vice-President during Jefferson's first term. In 1807, he was tried for treason and acquitted.



Amendment 12

Amendment 12 to the Constitution, adopted in 1804, provided that the President and Vice-President be elected separately.



Fulton's *Clermont*, the first commercially successful steamboat, puffed up the Hudson in 1807 on its first trip.



The War with Tripoli, from 1801 to 1805, ended with the Barbary pirates agreeing to respect the United States flag.



to col. He began the practice of having guests shake hands with the President, instead of bowing. He also placed dinner guests at a round table, so that everyone would feel equally important. Always interested in architecture, Jefferson developed some ideas for the addition of east and west terraces and a north portico to the White House. He employed Benjamin H. Latrobe to carry out these ideas (see LATROBE, BENJAMIN H.).

New Policies. Jefferson believed that government should play the smallest possible role in national life. With the help of Secretary of the Treasury Albert Gallatin, he began a policy of strict economy. The government sharply reduced department expenditures, especially those for the army and navy. It made substantial payments on the national debt. It repealed excise taxes, which had aroused opposition under the Federalists.

The administration also reversed other Federalist policies. It repealed the Naturalization Act. It let the other Alien and Sedition Acts lapse, and returned money to persons who had been fined under these laws.

Jefferson believed that appointments to federal jobs should be based on merit. But Federalists held all the offices, and he quickly discovered that vacancies "by death are few; by resignation none." The President removed some Federalists, and generally appointed Democratic-Republicans to vacancies. By the end of his second administration, his party held most federal offices. In effect, Jefferson's actions foreshadowed the spoils system (see SPOILS SYSTEM).

The Courts. The administration repealed the Judiciary Act of 1801, which had allowed President Adams to appoint more than 200 "midnight judges" just before he left office. These judges had no commissions, no duties, and no salaries. Jefferson told them to consider their appointments as never having been made.

William Marbury was one of 42 justices of the peace whom Adams had appointed to five-year terms in the District of Columbia. He applied to the Supreme Court for a writ of mandamus, ordering Secretary of State James Madison to deliver his commission (see MANDA-

MUS). Marbury did this in accordance with the Judiciary Act of 1789, which gave the Supreme Court power to issue such writs. Marbury's action led to one of the most important Supreme Court decisions in American history, that of *Marbury v. Madison* in 1803.

The Court refused to force Madison to deliver Marbury's commission. More important, the Court ruled that the Judiciary Act of 1789 was unconstitutional. Therefore, the Court held that it did not have the power to issue a writ of mandamus. On the surface, Chief Justice John Marshall's decision should have pleased Jefferson and his fellow Democratic-Republicans. The decision meant that the Jefferson administration did not have to deliver commissions to the "midnight judges" appointed by the Federalists. But the Democratic-Republicans were disturbed by the idea that the Supreme Court could declare unconstitutional a law passed by Congress. This principle placed a powerful weapon in the hands of the courts, which the Federalists still controlled. Many Democratic-Republicans feared that the Supreme Court would use its newly asserted power to help the Federalists.

The Democratic-Republicans tried impeachment as a way of checking the federal courts. First they impeached John Pickering, a New Hampshire judge who was a victim of insanity. After the Senate had removed Pickering from office, the House brought impeachment charges against Justice Samuel Chase of the Supreme Court. The House claimed that Chase had shown bias in conducting trials against several Republicans prosecuted under the sedition law. The Senate acquitted Chase, much to Jefferson's disappointment. This helped establish the precedent that political changes do not affect the tenure of judges. See IMPEACHMENT (History).

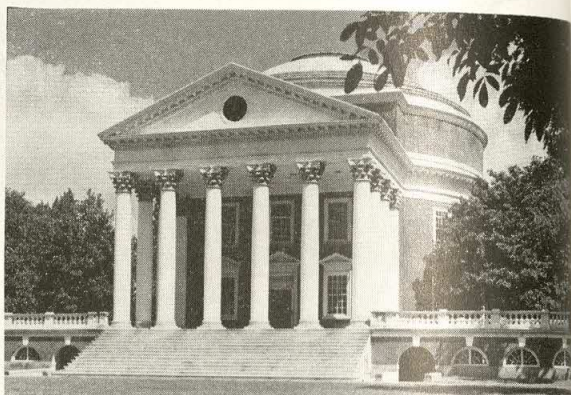
War with Tripoli. Ever since Jefferson had been minister to France, he had urged that the United States should act against the Barbary pirates of North Africa. These pirates attacked trading ships, demanding tribute and ransom from all countries. The United States had paid Tripoli, the most unruly of the Barbary States, \$2,000,000 in 10 years. In 1801, Tripoli opened war on American shipping because it wanted more tribute money. The little American navy blockaded Tripoli's ports, bombarded fortresses, and eventually forced the pirate power to respect the American flag. This war did not end the troubles with the Barbary States, but it brought prestige to the United States Navy.

Western Expansion. Jefferson had shown great interest in the West since his days in Congress. He obtained a grant from Congress early in 1803 for exploration of the region all the way to the Pacific Ocean. He sent Meriwether Lewis and William Clark on an expedition to the headwaters of the Missouri River, then across the Rockies to the Pacific. See LEWIS AND CLARK EXPEDITION.

The population of the Northwest Territory grew rapidly. Ohio joined the Union in 1803 as the 17th state. In 1804, the government encouraged western settlement by cutting in half, from 320 to 160 acres, the minimum number of acres of western land that could be bought. Any man with \$80 in cash could make the first payment on a frontier farm of his own.

The Louisiana Purchase ranks as one of Jefferson's greatest achievements. The Louisiana Territory, a vast region between the Mississippi River and the Rocky

REMINDERS OF



Ralph Thompson

The University of Virginia was planned and founded by Jefferson. He adapted the Rotunda, above, from the Pantheon of Rome.

Mountains, had been transferred from France to Spain in 1763. Jefferson learned in 1801 that Spain planned to cede the area back to France. When Louisiana belonged to Spain, it offered no threat to the United States. Under Napoleon, it might block American expansion and threaten American democracy.

In 1803, Jefferson obtained \$2,000,000 from Congress for "extraordinary expenses." He sent his old friend James Monroe to Paris to help the American minister, Robert Livingston, negotiate with France. Jefferson hoped to buy New Orleans and the Floridas. He at least wanted to get a perpetual guarantee of free navigation of the Mississippi and various commercial privileges at New Orleans.

The American commissioners proposed a modest purchase of New Orleans. Talleyrand, the French foreign minister, astounded them by asking: "What would you give for the whole of Louisiana?" The diplomats quickly struck a bargain. The United States bought the entire province of Louisiana for \$11,250,000, and agreed to give up American claims on France estimated at \$3,750,000. So, for about \$15,000,000, the government gained control of the Mississippi River and doubled the size of the United States.

— HIGHLIGHTS OF JEFFERSON'S ADMINISTRATION —

- 1801** (June 10) Tripoli declared war on America.
- 1802** (March 16) The U.S. Military Academy opened.
- 1803** (Feb. 24) The Supreme Court decided the case of *Marbury v. Madison*.
- 1803** (April 30) The Louisiana Territory was purchased from France.
- 1804** (March 12) John Pickering became the first federal judge to be impeached.
- 1804** (May 14) The Lewis and Clark Expedition set out for the Northwest.
- 1804** (Sept. 25) Amendment 12 to the Constitution was adopted.
- 1805** (June 4) The United States and Tripoli signed a peace treaty.
- 1807** (Dec. 22) Congress passed the Embargo Act against international commerce.
- 1808** (Jan. 1) The act prohibiting the importation of African slaves became law.
- 1809** (March 1) The Non-Intercourse Act was passed, banning trade with France and Britain.

THOMAS JEFFERSON

The Louisiana Purchase was President Jefferson's greatest achievement. A ceremony in New Orleans on Dec. 20, 1803, celebrated the purchase.

Martha Skelton Jefferson died before her husband became President. They had a son and five daughters, but only two of the girls lived to adulthood. Thomas Jefferson Memorial Foundation



Thomas Jefferson Memorial Foundation

Jefferson Invented the revolving chair and desk, above, and the items shown on the right.

Monticello, Jefferson's home, attracts thousands of visitors every year. Jefferson designed the 35-room, red brick mansion. It stands on the top of a mountain near Charlottesville, Va.

Colonial Studio, by Frank Dementi



Transfer of Louisiana to the United States
by Thure de Thulstrup, Louisiana Historical Society



Thomas Jefferson Memorial Foundation

Quartet Stand



Colonial Studio, by Frank Dementi

Revolving Buffet

Seven-Day Clock

Thomas Jefferson Memorial Foundation



JEFFERSON, THOMAS

Jefferson was amazed when he learned about the purchase. He doubted whether the government had a right under the Constitution to add this vast new territory to the Union. But his doubts did not keep him from submitting the treaty to the Senate, which ratified it by a vote of 26 to 5. Jefferson later said that he had "stretched the Constitution till it cracked." See LOUISIANA PURCHASE.

Election of 1804. There seemed little doubt that a prospering nation would re-elect Jefferson in 1804. The Democratic-Republicans nominated Governor George Clinton of New York for Vice-President.

But a group of northeastern Federalists feared that the purchase of Louisiana would weaken New England's position and influence. They felt that the time had come to break up the Union, and found a willing ally in Vice-President Burr. The plotters wanted to elect Burr governor of New York so he could help take that state out of the Union along with New England. Alexander Hamilton learned of the plot and exposed it.

The election of 1804 completely defeated the Federalists. Even New England, except for Connecticut, went Democratic-Republican. The final electoral count gave 162 votes to Jefferson and only 14 to the Federalist candidate, Charles C. Pinckney, a lawyer from Charleston, S.C.

Jefferson's Second Administration (1805-1809)

Jefferson's second term began, as he later put it, "without a cloud on the horizon." But a storm soon began to gather.

The Burr Conspiracy. Aaron Burr, already discredited in politics, had further damaged his reputation by killing Alexander Hamilton in a duel in July, 1804. He then became involved in a mysterious scheme, the purpose of which is still not clear. He may have wanted to take the West away from the United States, or perhaps to conquer the Spanish Southwest. In any case, Burr tried unsuccessfully to get support from the British, French, or Spanish against his own government. He then raised a small military force of his own. In 1806, Burr set off down the Ohio River for New Orleans, hoping to gather recruits along the way. General James Wilkinson, the governor of Louisiana, had encouraged Burr to expect his support. But he decided to expose Burr's plot, and wrote to Jefferson about a "deep, dark, wicked, and widespread conspiracy."

Jefferson had Burr captured, taken to Richmond, and tried for treason. To the disgust of Jefferson and others, Chief Justice Marshall interpreted the charge of treason so narrowly that the jury had to acquit Burr. See BURR, AARON.

The Struggle for Neutrality. War had broken out between Great Britain and France in May, 1803. Jefferson found that his chief tasks were to keep the United States out of the war, and at the same time uphold the country's rights as a neutral.

Britain and France were destroying each other's merchant shipping. One result was that a large part of the West Indies-Europe trade fell into American hands. American shipbuilding and commerce grew rapidly, and thousands of sailors were needed. Most of these men came from New England, but many had deserted

from British ships. Britain, desperately needing seamen, began stopping American ships on the high seas and removing all sailors suspected of being British. But it was difficult to tell British and Americans apart. Thousands of Americans were seized and forced into the British navy.

The struggle in Europe soon became so intense that neither side cared much about the rights of neutral nations. In the Berlin and Milan decrees of 1806 and 1807, Napoleon announced his intention to seize all neutral ships bound to or from a British port. The British issued a series of orders in council which blockaded all ports in the possession of France or its allies (see ORDER IN COUNCIL). In practice, this meant that the British would try to seize any ship bound for the European continent, while the French would do their best to seize ships sailing almost anywhere else.

The crowning outrage occurred in June, 1807, when the British frigate *Leopard* launched an unprovoked attack on the American ship *Chesapeake*. The *Leopard* fired on the *Chesapeake* after the captain of the American vessel refused to let the British search his ship for deserters. This incident almost brought the two nations to war. Jefferson later wrote: "The affair of the *Chesapeake* put war into my hand. I had only to open it and let havoc loose."

Commercial Retaliation. Jefferson knew that the United States was not prepared for war. In any case, it would have been hard to decide whether to fight France or Great Britain. The President believed that he could bring the warring nations to reason by closing American markets to them, and not selling them any American supplies. In 1807, he forced the Embargo Act through Congress. This law prohibited the export of any produce from an American port, or the sailing of any American vessel to a foreign port.

The embargo injured the United States far more than it did either Britain or France. Ships lay idle, sailors and shipbuilders lost their jobs, and exports piled up in warehouses. Many Americans evaded the law, and smuggling flourished.

The government had to pass additional laws to increase the nation's coastal defenses and to enforce the embargo. Jefferson, who found himself favoring more and more federal control, commented: "This embargo law is certainly the most embarrassing one we have ever had to execute." After 14 months, it became clear that the embargo would force no concessions from either Britain or France. Public clamor against the measure grew overwhelming and Congress repealed it in March, 1809. The administration then substituted the milder Non-Intercourse Act (see NON-INTERCOURSE ACT).

Many persons urged Jefferson to run for re-election again in 1808. But he chose to follow George Washington's example and retire from office after two terms. Jefferson made it clear that he expected James Madison to be the next President. Madison won election easily.

Later Years

Jefferson was 65 when he retired from the presidency in 1809. He felt free at last to cultivate those "tranquil pursuits of science" for which, he said, nature had intended him. "Never did a prisoner released from his chains feel such relief as I shall on shaking off the shackles of power," he wrote.

The Sage of Monticello. Leisure gave Jefferson a chance to enjoy his countless and varied interests. He turned to music, architecture, chemical experiments, and the study of religion, philosophy, law, and education. During his long absence, Monticello had run down, and Jefferson worked energetically to repair the damages of long neglect. He also experimented with new crops and new farming techniques, and improved his flower and herb gardens.

Jefferson carried on an immense correspondence with persons in all parts of the world. He improved a copying device called the *polygraph*, which made file copies of the many letters he wrote. He entertained an endless stream of guests who came to pay their respects. In 1811, Jefferson was reconciled with John Adams, and the two men renewed their old friendship. Their letters ranged widely over the fields of history, politics, philosophy, religion, and science. The remarkable correspondence continued until they died—both on the same day, July 4, 1826.

Jefferson had withdrawn from politics, but he was consulted constantly on public affairs. Madison and Monroe, his successors in the White House, frequently sought his advice. Jefferson had little money. He had made additions to Monticello, entertained lavishly, and supported members of his family. In 1814, he sold his library of 10,000 volumes to Congress to replace the books which the British had destroyed when they burned the Capitol. Public contributions aided him in later years, but Monticello passed out of the hands of his family after his death.

University Founder. Jefferson's most important contributions in his later years were probably in the field of education. He had worked in his youth for reform of Virginia's system of public education. Later he had tried to improve William and Mary College. In the end he became convinced that the state needed an entirely new university.

From the time he returned to Monticello, Jefferson worked constantly to create the University of Virginia. He projected his character, interests, and talents in planning a university "based on the illimitable freedom of the human mind to explore and to expose every subject susceptible of its contemplation." He reorganized the curriculum, hired the faculty, and selected the library books. Jefferson also drew the plans for the buildings and supervised their construction. As a result of his efforts, scholars from other countries were persuaded to teach at the university. In March, 1825, Jefferson had the joy of seeing the university open with 40 students.

But his strength was failing. On July 4, 1826, just 50 years after the adoption of the Declaration of Independence, Jefferson died. He was buried beside his wife at Monticello.

Critically reviewed by DANIEL J. BOORSTIN

Related Articles in WORLD BOOK include:

Anecdote (Jefferson Anecdote)	Embargo
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Declaration of Independence	Madison, Dolley P. Monticello
Democratic-Republican Party	Mount Rushmore National Memorial

JEFFERSON, THOMAS

Nickel (picture)
Non-Intercourse Act
President of the United States

Virginia (color picture, Natural Bridge)
Washington, D.C. (color picture, Jefferson Memorial)

Outline

- I. **Early Life**
 - A. Boyhood
 - B. Education
- II. **Colonial Statesman**
 - A. Revolutionary Leader
 - B. The Declaration of Independence
- III. **National Statesman**
 - A. Secretary of State
 - B. Vice-President
- IV. **Jefferson's First Administration (1801-1805)**
 - A. Life in the White House
 - B. New Policies
 - C. The Courts
 - D. War with Tripoli
- V. **Jefferson's Second Administration (1805-1809)**
 - A. The Burr Conspiracy
 - B. The Struggle for Neutrality
- VI. **Later Years**
 - A. The Sage of Monticello
 - B. University Founder

Questions

- What three achievements are noted on Jefferson's tombstone?
- How did Jefferson's political enemy help him become President in 1800? Why did he do this?
- On what occasion did Jefferson "stretch the Constitution till it cracked"?
- What is meant by *Jeffersonian Democracy*?
- How did Jefferson help advance democracy in Virginia?
- In what case did the Supreme Court gain great power during Jefferson's first administration?
- On what basis did Jefferson argue that Americans owed no allegiance to the British Parliament?
- How did Jefferson's views affect the adoption of the Constitution?
- Why did he lose prestige as Virginia governor? What resulted from the investigation that followed?
- How did Jefferson's philosophy of government conflict with that of Alexander Hamilton? What resulted from their differences of opinion?

Books to Read

- ADAMS, HENRY. *History of the United States*. New ed. 9 vols. Scribner, 1921. The opening chapters are reprinted in the paperback, *The United States in 1800*. Cornell Univ. Press, 1955.
- BOORSTIN, DANIEL J. *The Lost World of Thomas Jefferson*. Beacon Press, 1960.
- BOWERS, CLAUDE G. *Jefferson and Hamilton*. Houghton, 1929. *Jefferson in Power*. 1936.
- CHINARD, GILBERT. *Thomas Jefferson: The Apostle of Americanism*. 2d ed. Univ. of Michigan Press, 1957.
- KOCH, ADRIENNE and PEDEN, WILLIAM, eds. *The Life and Selected Writings of Thomas Jefferson*. Modern Library, 1944. A readable brief selection.
- MALONE, DUMAS. *Jefferson, the Virginian*. Little, Brown, 1948. *Jefferson and the Rights of Man*. 1951. Detailed and scholarly, but easy to read.
- SHEEAN, VINCENT. *Thomas Jefferson: Father of Democracy*. Random House, 1953. Jefferson's philosophy is made clear for teen-agers.

JEFFERSON CITY

JEFFERSON CITY, Mo. (pop. 28,228; alt. 625 ft.), is the capital of the state. It lies on the south bank of the Missouri River, about midway between Saint Louis and Kansas City (see **MISSOURI** [map]). Jefferson City serves as an agricultural trading center for the nearby farming areas. Factories produce beverages, clothing, flour, and shoes. The Missouri State Penitentiary is in Jefferson City.

The Capitol, completed in 1917, is an outstanding architectural feature of the city. It is built of Missouri limestone. Its Renaissance-type dome towers about 260 feet above the ground, and overlooks the Missouri River Valley. The works of many sculptors and painters are represented in the Capitol or on the surrounding grounds. Famous murals by the American artist Thomas Hart Benton portray the history of Missouri on the walls of the west wing.

Lincoln University is located in Jefferson City. The first funds for the establishment of the university came from a Negro regiment during the Civil War.

In 1821, the site of Jefferson City was selected as the location for the Missouri state capital, because of its favorable position along the Missouri River. It was named Jefferson City in honor of Thomas Jefferson. It became a town in 1825 and a city in 1839. The seat of Cole County, Jefferson City has a mayor-council type of government.

NOEL P. GIST

JEFFERSON MEMORIAL is a shrine to the third President of the United States. It is one of a group of three memorials to famous American Presidents in Washington, D.C. The other two units are the Washington Monument and the Lincoln Memorial.

The memorial is a white marble building on the south side of the Tidal Basin near the Potomac River. President Franklin D. Roosevelt broke ground for the memorial in 1938. It was built at a cost of \$3,000,000. The shrine was dedicated on April 13, 1943, the 200th anniversary of the birth of Thomas Jefferson, the author of the Declaration of Independence.

The building contains an 18-foot statue of Jefferson. Quotations from the Declaration of Independence and other writings by Jefferson are carved on the wall panels of the shrine.

Two circular terraces surround the memorial. There are three broad flights of steps, with level platforms at intervals, leading from the edge of the Tidal Basin to the portico. The portico is supported by 12 columns, 8 of which are across the front. The other memorials may be seen from this portico.

JEFFERSON TERRITORY covered the present state of Colorado and parts of Kansas, Nebraska, Utah, and New Mexico. Thousands of Americans rushed into this area in 1858 and 1859 because of rumors of gold discoveries. In 1859, a group of miners established a provisional government, elected Robert W. Steele as governor, wrote a constitution, and sent a delegate to Congress requesting recognition as the Jefferson Territory. Congress failed to grant the request, but the provisional government continued to operate until 1861, when Congress created the Colorado Territory (see **COLORADO** [Territorial Days]).

INA WOESTEMEYER VAN NOPPEN

JEFFERSONIAN DEMOCRACY. See **JEFFERSON**, THOMAS.

JEFFERSONVILLE, Ind. (pop. 19,522; alt. 455 ft.), is a river port in southeastern Indiana, and the seat of Clark County (see **INDIANA** [map]). A bridge over the Ohio River connects it with Louisville, Ky. Chief manufactures include foundry and wood products, and machinery. It has shipyards and railroad-car works. In 1958, the U.S. Bureau of the Census took over an army depot there to handle work on the 1960 census. Jeffersonville was founded in 1802. It has a mayor-council form of government.

PAUL E. MILLION, JR.

JEFFRIES, JAMES JACKSON (1875-1953), won the world's heavyweight boxing championship in his 13th professional fight. He won the championship on June 9, 1899, by knocking out Bob Fitzsimmons in 11 rounds. He retired undefeated in 1905, but made a comeback in 1910. Jack Johnson knocked him out in 15 rounds. Jeffries later promoted amateur boxing. He was born at Carroll, Ohio. He first became a fighter when he was 16. His mother opposed his ring career, but he resumed it when he was 21.

LYALL SMITH

JEFFRIES, JOHN. See **BALLOON** (Important Early Ascents).

JEHAN, SHAH. See **SHAH JAHAN**.

JEHOIAKIM, *jee HOK uh kim* (? -598? B.C.), was king of Judah from about 608 B.C. until his death. In 605 B.C., he led a revolt against the Babylonian king who then ruled Palestine, and died in the siege of Jerusalem that followed the uprising.

JEHORAM, or **JORAM** (king of Israel). See **JEHU**.

JEHORAM, or **JORAM** (king of Judah). See **AHAB**.

JEHOSHAPHAT, *jee HOSH uh fat*, was one of the ablest rulers of Judah. He ruled from about 873 B.C. to 849 B.C. Faced with constant danger from the neighboring Aramaeans and a growing menace from the Assyrians, Jehoshaphat was statesman enough to settle traditional differences with Israel. But the Judeans opposed Jehoshaphat's cooperation with Israel's rulers, Ahab and Jezebel, and the marriage of Jehoshaphat's son to Ahab's daughter, Athaliah (see **AHAB**).

Jehoshaphat succeeded in controlling neighboring peoples, including the Philistines along the Mediterranean Coast and the Edomites across the River Jordan. He promoted industry and commerce by operating copper mines in the port town of Ezion Geber. E. A. SPEISER

JEHOVAH, or **YAHWEH**, is one of the Old Testament names for God. The early Hebrews thought of Him as their own God. But after the time of Moses, especially under great Prophets such as Samuel, Yahweh was recognized as the universal God, the Father of all men, the source of righteousness. Psalmists often used the name Elohim, but the name Jehovah had a deeper significance as Redeemer. Many Jews avoid pronouncing the divine name by using the term *Adonai*, meaning *the Lord*. See also **ELOHIM**; **JEWS**; **JUDAISM**. LOUIS L. MANN

JEHOVAH'S WITNESSES are Christians who use the Watch Tower Bible and Tract Society as their governing body. They took their name from the American Standard Version of the Bible, Isaiah 43:12: "Ye are my witnesses, saith Jehovah, and I am God." Jehovah's Witnesses are a religious society of ministers who give exclusive devotion to Jehovah, and keep His command to preach "this good news of the Kingdom." They believe God's war of Armageddon will rid the earth of all wickedness in this generation.

Members of this movement consider Abel, the son of

Adam, as the first of Jehovah's witnesses, and cite Hebrews 11 and 12:1 as their source. The modern organization was started in Pennsylvania in the 1870's by Charles Taze Russell. The Watch Tower Bible and Tract Society was incorporated in 1884 with Russell as president. Succeeding presidents have been Judge J. F. Rutherford and N. H. Knorr. The Society's magazine, *The Watchtower*, was first published in 1879. It is printed in 54 languages.

Jehovah's Witnesses conduct activities in 175 countries and colonies. Headquarters of the Society are at 124 Columbia Heights, Brooklyn 1, N.Y. For membership, see RELIGION (table).

MILTON G. HENSCHEL

See also BAPTISM (picture).

JEHU, JAY hyoo, was a king of Israel. King Jehoram and Queen Jezebel had introduced the worship of Baal into Israel (see BAAL). This worship angered the prophets and others loyal to Israel's God. In 842 B.C., the prophet Elisha sent one of his disciples to anoint Jehu, an officer in King Jehoram's army, as king in place of Jehoram. Jehu then drove in his chariot to the capital, Jezreel. He killed Jehoram and Jehoram's cousin, King Ahaziah of Judah, when they rode out to meet him. Queen Jezebel was thrown from a window and trampled underfoot. Jehu then murdered the entire royal family. Finally, he summoned all the worshipers of Baal into their temple, where his soldiers butchered them. The story is told in II Kings 9-10. Jehu died about 815 B.C. He and his descendants ruled Israel for more than 100 years.

JOHN BRIGHT

JEJUNUM. See ALIMENTARY CANAL.

JEKYLL ISLAND has been one of Georgia's state parks since 1954. For location, see GEORGIA (color map). From 1887 to 1947, when the island was sold to the state, it was owned by a club formed by 100 of the richest men in the U.S. It was a public resort from 1947 until 1954.

JELlicoe, JEL ih koh, SIR JOHN (1859-1935), EARL JELlicoe, was a British naval officer during World War I. He commanded the British Grand Fleet at the battle of Jutland in May, 1916, the only time the main British and German fleets met in combat (see JUTLAND, BATTLE OF). The result of the battle was controversial. Although the British suffered greater damage, the German fleet never again tried to contest British control of the North Sea. Jellicoe then directed the campaign against German submarine warfare. He was born in Southampton, and joined the navy when he was 12. He served in Egypt in 1882 and in the Boxer Rebellion in China in 1900. Jellicoe was governor-general of New Zealand from 1919 to 1924. He was made an earl in 1925.

ALFRED F. HAVIGHURST

JELLY AND JAM. The three common types of jelly come from animals, starch, or fruits. Animal jelly, called *gelatin*, is made by boiling in water the muscles, cartilage, and skins of animals. Stores usually sell gelatin in powdered form (see GELATIN). Starch jellies are made from arrowroot, cornstarch, sago, and tapioca.

Jelly to most people means fruit jelly. Jelly is made by boiling fruit until it is tender. The hot cooked fruit is poured into a cloth jelly bag, and the juice drips through into a large bowl. The juice is then mixed with sugar and boiled until it *jells*, or congeals. The substance that makes jelly thicken is called *pectin*. The best jelly comes from fruits that contain large amounts of this carbo-

hydrate food. Some fruits do not have enough of this substance. Then it is necessary to add commercial pectin, which is made from skins and cores of fruits used at canneries. Commercial pectin can be bought in liquid or powder form. See PECTIN.

Jams are also made by boiling fruit with sugar. The fruit is crushed and cooked, but the juice is not drained off. The fruit juice and the pulp are kept together. Jams can be made from the same fruits as jellies, and by the same methods.

HELEN MARLEY CALAWAY

JELLYFISH is a sea animal with a thick layer of jelly-like material. The many kinds of jellyfishes are classed in the coelenterates, the third lowest phylum of the animal kingdom. They are not true fishes, because a

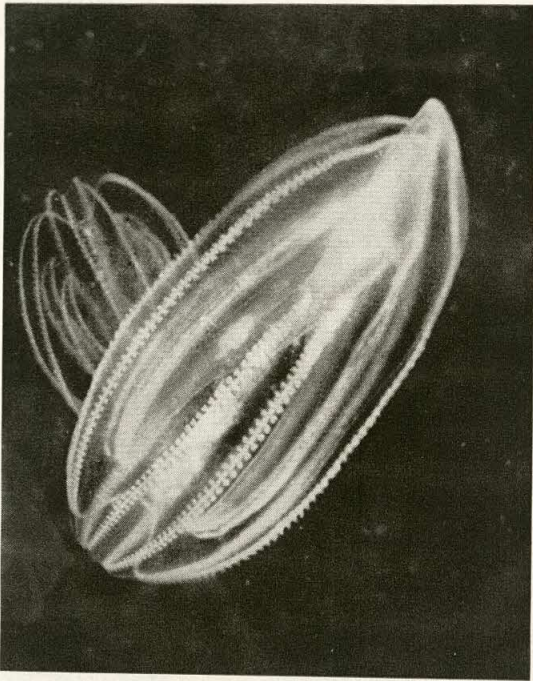


American Museum of Natural History

A Jellyfish in the Medusa Stage resembles an umbrella. The tentacles trailing beneath it are able to sting severely. But some small fish are not harmed by the stings, and seek refuge from enemies among the tentacles of the jellyfish.

fish is a *vertebrate*, or animal with a backbone. A jellyfish has only two layers of cells. The outer layer is called the *ectoderm*, and the inner one is the *endoderm*. Higher animals have a third layer connecting these two. In place of a middle layer, jellyfishes have the thick layer of jelly. This gives them support and makes them float more easily.

There are two types of jellyfishes, the medusas and the ctenophores. A *medusa* looks like an umbrella, with a fringe of tentacles around the edge, and a mouth part hanging down where the handle would be. Different species vary in size from less than an inch to 12 feet.



Ralph Buchsbaum

The Ctenophore Type of Jellyfish is also called a sea walnut. The comblike organs on its body give off light.

They swim by expanding like an opening umbrella, then pulling themselves together and squeezing out the water. The tube in the center, with its mouth, leads to the *gastrovascular cavity*. Here food is digested, then carried through branching canals to all parts of the body.

The name *medusa* comes from the tentacles, which suggest the snakes that grew on the head of Medusa, a character in Greek mythology. The tentacles usually have stinging organs. As the jellyfish floats through the water, it extends its tentacles and catches small organisms, worms, shrimps, or even small fishes. Larger jellyfishes can inflict dangerous stings.

In many coelenterates, the medusa is one stage in a life cycle. The young animal first goes through a *polyp* stage, in which it is not free to swim, but is attached (see *POLYP*). Sometimes polyps are attached together in colonies, and look like plants. When the polyp matures, it breaks off from the colony and enters the medusa stage of life. Since the medusa is more active than the polyp, it has a more highly developed nervous system, and a thicker supporting layer of jelly. The existence of the same species in more than one form is called *polymorphism*.

The *ctenophores* are commonly called *comb jellies* and *sea walnuts*. They live in all parts of the ocean, but are most abundant in warm water. Ctenophores are jellyfishes with a different structure from most coelenterates. Some zoologists think they are a separate phylum. They are more transparent than medusas. Many are shaped like walnuts, but some are like spheres, some like ribbons, and others like thimbles.

Ctenophore means a *comb bearer*. The animals get this name from the comblike organs that extend in bands

along the body from the mouth to the opposite end. There are eight of these bands. The combs are made of groups of *cilia*, or hairlike growths. A ctenophore slowly moves through the water by moving these cilia. In some comb jellies the rapid beating gives off beautiful changing colors, and in others it gives flashes of light.

Scientific Classification. Jellyfishes belong to the phylum *Coelenterata*. The small medusas with polyps belong to the class *Hydrozoa*. Large medusas, mostly without polyps, belong to the class *Scyphozoa*. The ctenophores make up the subphylum *Ctenophora*.

ROY WALDO MINER

See also COELENTERATE; MEDUSA.

JEMISON, MARY (1743-1833), was called "The White Woman of the Genesee." She was born at sea while her parents were coming from Ireland to America. The family settled on a farm in Pennsylvania. A party of Indians and French soldiers captured the family in 1758. Most of the captives were killed, but two Indian women of the Seneca tribe adopted Mary Jemison. She grew up with the Indians, and refused to return to her own people when she had the chance. She married Indian men twice. Her second husband was a chief.

The New York legislature gave her land along the Genesee River in 1817. There the white settlers became interested in her life history. In 1831, she moved with the Senecas to the Buffalo Creek Reservation, and died there.

KENNETH R. ROSSMAN

JENA, JAR nuh (pop. 83,100), is a center of learning located in the Thuringian region of East Germany. The famous Friedrich-Schiller University, founded in 1558, is especially noted for its departments of medicine, biology, philosophy, and theology.

JENGHIS KHAN. See GENGHIS KHAN.

JENIFER, DANIEL OF ST. THOMAS (1723-1790), was a Maryland signer of the United States Constitution. As a nationalist in the Constitutional Convention, he wanted Congress to have the power of taxation. He served as president of the Maryland Council of Safety in 1775, and as a member of the Maryland Senate in 1777. He also served as a Maryland commissioner to settle disputes with Virginia over the use of the Potomac River. A wealthy planter, he was born in Charles County, Maryland.

ROBERT J. TAYLOR

JENKINS, CHARLES FRANCIS (1867-1934), contributed to the development of the motion-picture projector. He developed the *phantascope* between 1891 and 1894. The Franklin Institute later recognized this as the first successful projector of life-size pictures from narrow motion-picture film. The phantascope led to other developments and refinements. Jenkins also worked on mechanical scanning devices for television and on other inventions in the fields of electronics and photography. He was born near Dayton, Ohio, and attended Earlham College.

RICHARD D. HUMPHREY

JENKINS, CHARLES JONES (1805-1883), an American jurist and statesman, practiced law and politics in the state of Georgia. As a Union Whig, he endorsed the Compromise of 1850 and opposed secession (see *COMPROMISE OF 1850*). He served on the Georgia Supreme Court during the Civil War, and could not be spared to take a position in Jefferson Davis' cabinet. He was elected governor of Georgia in 1865. He was born in the Beaufort district of South Carolina. ARTHUR A. EKIRCH, JR.

JENKINSON, ANTHONY. See *EXPLORATION AND DISCOVERY* (table, Famous Explorers).

JENNER, EDWARD (1749-1823), a British physician, discovered vaccination as a means of preventing smallpox. Before his time, no mother counted her children safe until all had passed through smallpox. This disease was an ever-present horror. If Jenner's method of vaccination were adopted everywhere, smallpox would disappear entirely (see SMALLPOX).

It was common knowledge in Jenner's time that a person could catch smallpox only once. Many people tried to inoculate themselves with matter from smallpox sores. They hoped to catch a light case of the disease, and then be immune to it for the rest of their lives. Lady Mary Wortley Montagu, an English author, had introduced this method into England in 1718. But the method was dangerous.

Jenner's Work. Jenner began experimenting in his home town, Berkeley, Gloucestershire. Many people there believed that dairymaids who had caught cowpox could not catch smallpox. Cowpox is a minor disease that causes a few sores on the hands but carries little danger of disfigurement or death. In 1796, Jenner took matter from the hand of Sarah Nelmes, a local dairymaid. She had become infected with cowpox while milking the cows. Jenner then made two cuts on the arm of James Phipps, a healthy eight-year-old boy, and inserted the matter from one of Sarah's cowpox sores. The boy then caught cowpox. Six weeks later, Jenner intro-

duced smallpox matter into the boy's arm. Ordinarily fatal, the smallpox matter had no effect, because the boy had been vaccinated. The experiment proved successful. This was the first vaccination ever given (see VACCINATION).

Recognition. After several more experiments, Jenner published *Inquiry into the Causes and Effects of the Variolae Vaccinae* (1798). He then went to London to make his discovery known to the medical world. In 1799 he published *Further Observations on the Variolae Vaccinae or Cowpox*, which he wrote chiefly as a reply to people objecting to the practice of vaccination. After 1800, vaccinations became accepted as a means to prevent smallpox. Honors came to Jenner from all parts of the world. Parliament granted him 10,000 pounds in 1802, and another 20,000 pounds in 1806, because he devoted so much time to his discovery that he lost income from his regular medical practice. Oxford University conferred an honorary M.D. degree on Jenner in 1813.

Jenner was born on May 17, 1749, at Berkeley, Gloucestershire. In 1770 he went to London to study medicine under John Hunter, an English surgeon, and at Saint George's Hospital in London. He returned to Berkeley, where he began practicing medicine, and he remained there most of his life.

GEORGE ROSEN

Ewing Galloway



Bettmann Archive

Edward Jenner, above, gave the first vaccination for smallpox to James Phipps in England in 1796, right. Sarah Nelmes, far right, bandaged her cowpox-infected hand. Jenner risked his medical reputation in attempting this vaccination.



JENNER, SIR WILLIAM

JENNER, SIR WILLIAM (1815-1898), a British physician, studied certain acute communicable diseases and did much to advance their treatment. His most important contribution was his emphasis on the difference between typhoid fever and typhus (see **TYPHOID FEVER**; **TYPHUS**). Jenner's efforts have made possible a more practical treatment of these diseases. His works include the papers "On the Identity and Non-Identity of Typhoid Fever" and "Diphtheria, Its Symptoms and Treatment," as well as clinical lectures.

Jenner was born at Chatham, England, and was graduated from University College, London. He later taught there. He served as president of the Royal College of Physicians from 1881 to 1888. He became an extremely successful and prominent practitioner in the field of medicine.

GEORGE ROSEN

JENNET is the term used for a female ass. In Africa, jennets are often kept for milk. See also **DONKEY**.

JENNEY, WILLIAM LE BARON (1832-1907), an American architect, designed the first skyscraper, the Home Insurance Building in Chicago, Ill. It was built in 1884 and demolished in 1931. Jenney also designed many other iron and steel-framed Chicago skyscrapers (see **SKYSCRAPER**). He founded the department of architecture at the University of Michigan. Jenney was born in Fairhaven, Mass. Primarily an engineer, he was trained at Harvard University and in Paris. He served as an engineer in the Civil War.

HUGH MORRISON

JENNINGS, JONATHAN. See **INDIANA** (Famous Hoosiers).

JENNINGS, SARAH. See **MARLBOROUGH, DUKE OF**.
JENNY. See **SPINNING JENNY**.

JENSEN, YEN s'n, JOHANNES VILHELM (1873-1950), a Danish author, won the 1944 Nobel prize for literature. His masterpiece was the six-volume novel *The Long Journey* (1908-1921). This work describes the evolution of mankind from before the ice age to the time of Christopher Columbus. Jensen won his first success in 1898 with *Himmerland Stories*, tales about country life. He called many of his stories "myths" because they symbolically expressed his philosophy of life. He was born in Farsø, North Jutland.

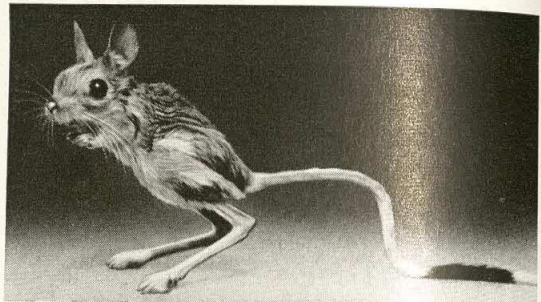
EINAR HAUGEN

JENSON, NICOLAS (1415?-1480), a French printer, introduced Roman types in 1470 (see **TYPE** [Styles of Type]). His types have often been imitated but never surpassed. Jenson was born in Sommevoire, France. The French king apparently sent him on a secret mission to Mainz, Germany, in 1458 to see how Johannes Gutenberg printed books from type (see **GUTENBERG, JOHANNES**). He never returned home. He learned the art of typography in Germany and then settled in Italy. He died in Rome.

RAY NASH

JEPHTHAH, JEF thuh, was a military leader of ancient Israel. He is famous for the tragic story of his sacrifice of his only child, a daughter, to fulfill a vow. As he went to a desperate battle with the Ammonites who were oppressing the Hebrews, he vowed that, if he were victorious, he would sacrifice whoever first came out of his house to meet him on his return. Not knowing this, his daughter came out, and welcomed him with songs and dances. The story is told in Judges II. It is similar to the Greek myth about Iphigenia (see **IPHIGENIA**).

WALTER G. WILLIAMS



N.Y. Zoological Society

The Jerboa Looks Like a Tiny Kangaroo, but it is really a member of the rodent family. Like the kangaroo, it jumps when frightened, and it uses its long tail to balance itself.

JERBOA, jur BOH uh, is a fawn-colored rodent or gnawing animal that looks somewhat like a tiny kangaroo. It lives on deserts and grassy plains in Africa, Asia, and eastern Europe. A relative of mice and rats, it has short forelegs and long hind legs. A frightened jerboa runs on its hind legs in bounding leaps like a kangaroo. When it walks it stands upright, and does not hop. Jerboas live in colonies in burrows, and come out to hunt food at night. In cold climates, they sleep through the winter.

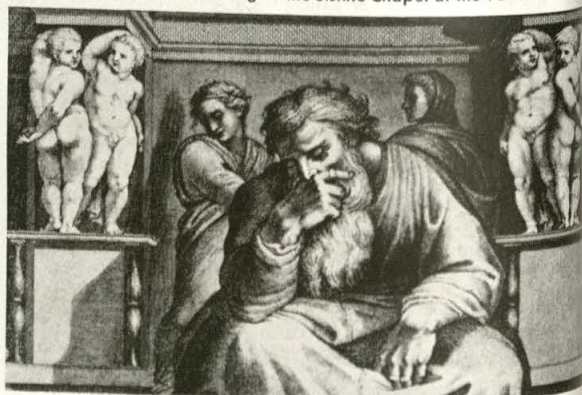
The best-known species is the *Egyptian jerboa*, an animal 6 to 8 inches long. Its tail is even longer and has a tuft on the end. The animal uses its short forelegs, with five toes each, to handle things. The Egyptian jerboa makes a fine pet. Another species is the *alactaga*, or *jumping rabbit*, of Turkestan. This animal is used for food.

Scientific Classification. Jerboas belong to the family *Dipodidae*. The Egyptian jerboa is genus *Dipus*, species *aegypticus*. The *alactaga* is *Alactaga decumana*. STANLEY P. YOUNG

JEREMIAH was a Hebrew prophet from about 626 to 586 B.C. He was the son of Hilkiah, a priest in the village of Anathoth, northeast of Jerusalem. Jeremiah tried in vain to reform the religious, social, and political life of his people. Religion, in his day, was closely tied to political leadership. The prophet taught that the heart of religion is an individual's personal relationship to God, and emphasized the importance of the individual.

Jeremiah foresaw the danger of a Babylonian invasion. Nebuchadnezzar, the Babylonian king, attacked

The Prophet Jeremiah is one of the major figures in Michelangelo's frescoes on the ceiling of the Sistine Chapel at the Vatican.



Israel in 597 B.C. and again in 586 B.C. Each time, leading citizens were taken captive. On the second attack, Nebuchadnezzar destroyed the city and burned the Temple. He allowed Jeremiah to stay in Palestine. Jeremiah's gentleness, courage, loyalty, and spiritual dignity made him one of the greatest men of Israel.

The Book of Jeremiah is the second of the Major Prophets of the Bible. Chapters 1-24 record many of his prophecies. Chapters 25-44 relate his experiences, and the remaining chapters are prophecies against nations. His secretary probably collected and edited much of the book. Jeremiah revealed his inner feelings as he faced many failures. His poetry has a thoughtful, haunting beauty. Tradition also credits the Book of Lamentations to Jeremiah (see LAMENTATIONS). WALTER G. WILLIAMS

JERICHO, *JEHR uh koh* (pop. 41,593), lies in Jordan, north of the Dead Sea. For location, see JORDAN (map). Many settlements have been built here, one on top of the other. In 1956, archaeologists revealed evidence of early Jericho, dating from between 6000 and 1400 B.C. Many believe it is the oldest settled community yet found. In the Bible story, the Israelites under Joshua marched around the city for seven days, then shouted and blew their trumpets so that the walls fell down (see JOSHUA). J. ALLEN TOWER

JERITZA, *YEH ree tsah*, **MARIA** (1887?-), a Czech dramatic soprano, became popular with audiences of two continents because of her versatility and personality. She sang Italian, German, and French operas with ease. Miss Jeritza made her debut when she was 23, as Elsa in Richard Wagner's *Lohengrin*. She attracted Richard Strauss' attention, and he asked her to sing the title role in his opera *Ariadne auf Naxos*. Giacomo Puccini is said to have considered her the best Tosca (see OPERA [Some of the Famous Operas]). Miss Jeritza made her first American appearance at the Metropolitan Opera House in New York City in 1921. She sang leading roles until she left the company in 1932. She was born in Brünn (now Brno), Czechoslovakia. MARTIAL SINGER

JERKING. See DEER (The White-Tailed Deer).

JEROBOAM, *JER oh BOH um*, was the name of two kings of ancient Israel, the northern Hebrew kingdom of Palestine.

Jeroboam I, the first king of Israel under the divided kingdom, reigned from about 922 B.C. to 901 B.C. Jeroboam opposed the royal family during Solomon's reign, and took refuge in Egypt. After Rehoboam became king, the northern tribes seceded and made Jeroboam their king (see SOLOMON [His Downfall]). He established two new shrines to free his people from dependence on the great religious center in Jerusalem.

Jeroboam II ruled from about 786 B.C. to 746 B.C. His reign marked a political revival of Israel. There were economic advances but also corruption and oppression of the poor in his reign. E. A. SPEISER

JEROME, **JEROME Klapka** (1859-1927), was a British playwright, novelist, and humorist. *Three Men in a Boat* (1889), a book of humor, is typical of his comic works. But his most popular play, *The Passing of the Third Floor Back* (1908), was not a comedy. The play showed the influence of a Christlike stranger on a group of sordid, shiftless persons. Jerome also wrote *My Life and Times* (1926). He was born at Walsall in Staffordshire. WALTER WRIGHT



Saint Jerome was one of the great Bible students of the Roman Catholic Church, as well as a writer and historian. This photograph is reproduced from a painting by Albrecht Dürer. U&U

JEROME, SAINT (about 340-420), was a learned Father of the Roman Catholic Church. He was born at Stridon, a small town of the Illyrian Alps. From 374 to 379 he led a hermit's life in the desert of Chalcis near Antioch. Jerome was then ordained a priest in Antioch, and went to Constantinople. There he became a student and friend of Gregory of Nazianzus, and began intensive study of the Scriptures.

In 382 he returned to Rome. On the death of Pope Damasus I, Jerome was forced to leave the city because his harsh criticisms had made him many bitter enemies. He settled in a monastery near Bethlehem in 386, as a recluse and a student.

The Biblical knowledge of Jerome made him the best of the early interpreters of the Bible. His Latin version of the Old Testament from the Hebrew is the Vulgate version which is in use among Roman Catholics today. He revised the Latin New Testament, using the best Greek manuscripts of his time. Saint Jerome's feast day is September 30. FULTON J. SHEEN

See also VULGATE.

JERSEY. See CATTLE (Dairy Cattle).

JERSEY, *JUR zih*, is the largest of the Channel Islands. It is the southernmost island of the group and lies off the west coast of the Normandy peninsula in the English Channel. Jersey has an area of about 45 square miles and a population of about 57,200. For location, see GREAT BRITAIN (color map).

It is known as the original home of Jersey cattle. Important products are potatoes, tomatoes, and fruit. Jersey has its own legislature, the Assembly of the States. The chief executive is a lieutenant governor appointed by the British ruler. Most of the people of Jersey speak English, but French is the official language of the island. FRANCIS H. HERRICK



Fairchild Aerial Surveys, Inc.

Jersey City, N.J., is an important industrial center and seaport just across the Hudson River from New York City. Several large railroad terminals line the water front, where transatlantic freighters dock for loading and unloading.

JERSEY CITY, N.J. (pop. 276,101; alt. 20 ft.), is one of the busiest transportation centers in the world. Its excellent transportation services and its nearness to metropolitan markets also make it an important industrial city. Jersey City lies in the northern part of the state, across the Hudson River from New York City. For location, see **NEW JERSEY** (color map).

Factories in the city produce chemicals, clothing, electrical equipment, food products, iron and steel ware, paints, pencils, and soaps. Publishing is another important industry. Jersey City's stockyards and slaughterhouses make it a major meat-packing center.

Description. The city has 11 miles of water front. Cargoes are ferried to New York City or shipped to destinations around the world, from the piers and wharves along the water front. Much of the ship and rail traffic of the Port of New York is handled at Jersey City. Tunnels under the Hudson River provide passage for automobile, railroad, and subway traffic between Jersey City and New York City. The double-tube Holland Tunnel, completed in 1927, can accommodate more than 4,000 vehicles each hour. The Pulaski Skyway, a three and one-half mile elevated highway, enters Jersey City. Nine major railroads and a spur of the New Jersey Turnpike also serve Jersey City.

St. Peter's College, Jersey City State College, the Medical College of Seton Hall University, and over 30 public schools are in Jersey City. The municipal medical center includes the Margaret Hague Maternity Hospital, one of the largest of its kind in the country. Jersey City also has art galleries, a library with 15 branches, a museum, and a philharmonic symphony orchestra.

Landmarks of Jersey City include the old Bergen Church, dedicated in 1842. The Colgate Clock, on one of the buildings of the Colgate-Palmolive-Peet Company, measures 50 feet in diameter and can be seen

by people living in lower Manhattan in New York City.

History. Dutch traders established a trading post on the site of the present city in the 1600's. During the Revolutionary War, military battles were fought at Paulus Hook, an early name for Jersey City. In 1812, Robert Fulton introduced steam ferry service across the Hudson to New York City. Jersey City was incorporated in 1820. In the 1830's, the coming of the railroads, the building of the Morris Canal, and the settlement of a long-standing dispute with New York over control of the water frontage brought new prosperity to the city. The terms of the settlement gave Jersey City access to its own water line, by setting the boundary between the two states in the middle of the Hudson River. Attempts to construct a railroad tunnel between Jersey City and New York City began in 1874. The Hudson Tubes were finally completed in 1910. Jersey City's famous Democratic mayor, Frank Hague, was one of the last city "bosses." He served from 1917 until 1947.

The seat of Hudson County, Jersey City has a commission form of government.

RICHARD P. McCORMICK

JERSEY CITY STATE COLLEGE is a coeducational state-controlled school in Jersey City, N.J. Courses in education lead to B.S. in Ed. degrees. The college was founded in 1921. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

JERSEY CLOTH is a plain knitted cloth of wool, rayon, nylon, cotton, silk, or a mixture of these yarns. The cloth may be smooth or somewhat hairy, or *napped*. Rayon and nylon jersey are usually called *tricot*. Jersey is used for dresses, suits, lingerie, and sportswear. *Stockinet*, a kind of cotton jersey, is used for infants' wear.

JERSEY LILY. See **LANGTRY, LILY**.

JERUSALEM, *jee ROO suh lem* (pop. 146,000; met. area, 200,000), is a holy city of Jews, Christians, and Moslems. Part of the city is in Israel and part of it is in Jordan. The Jews of Bible times made Jerusalem their capital and chief city, and built their holy Temple here. The Christians consider Jerusalem holy because it was the place where Jesus was crucified and because many happenings in the life of Jesus took place here. The Moslems made Jerusalem their third holy city, ranking it next after Mecca and Medina in Arabia.

People of these three faiths live in the two sections of Jerusalem today. The *Old City* is built on the site of ancient Jerusalem. Much of the Old City is surrounded by high stone walls. The life along its narrow, crooked streets has remained much the same for hundreds of years. Some of the most sacred religious shrines are in the Old City. This old part of Jerusalem belongs to Jordan. The Old City has spread beyond the ancient walls into the adjoining territory, where modern ways of life have been introduced.

The *New City* of Jerusalem is separated from the ancient part of the Old City by the city walls and by a single street. The life of the New City is up to date.

Location and Description. Jerusalem lies on top of a region of broken hills called the Mountains, or Highlands, of Judea. The city lies 2,618 feet above sea level. West of the city, the Judean highlands slope down to meet the lowlands and the plains along the Mediterranean coast. Eastward, Jerusalem looks down on the Wilderness of Judea, the Jordan Valley, and the Dead Sea. For location, see ISRAEL (color map).

The older part of Jerusalem is located in the place where the small valleys of Kidron and Hinnom join. The newer part of Jerusalem spreads over the hills and valleys that are the main feature of the landscape. The Mount of Olives rises east of Jerusalem.

Jerusalem has few of the natural geographical advantages of most great cities. King David chose it as his capital mainly because it did not lie on any major trade routes. It was also high and difficult to attack. There his new nation could develop its religion with little interference from the outside world.

The Old City. About one fifth of the people of Jerusalem live in the Old City. Since the partition of Jerusalem in 1948, the Old City and the suburbs east and northeast of the city walls have belonged to the Hashemite Kingdom of Jordan. The city walls make the Old City look like a fortress. These walls are $2\frac{1}{2}$ miles long and 38½ feet high. Most of the walls were built in the 1500's, but parts are much older. The city is divided into three sections. Moslems, Christians of several denominations, and Armenian Christians live in these three sections. Until 1948, there was also a Jewish section. The Old City is a network of cobblestone alleys. The busiest streets are the *souks*, or markets. They have small, dark shops on either side.

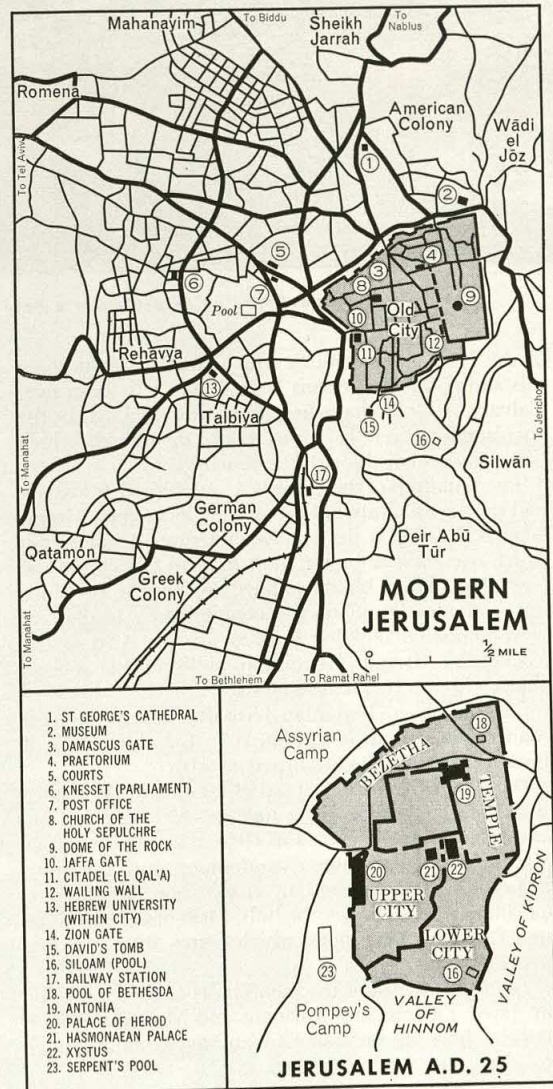
Most of the streets are too narrow for cars and trucks to get through. The commonest form of transport is by donkey or camel. These animals plod through the narrow alleys along with Arabs in loose, flowing robes and Western pilgrims and travelers dressed in the latest fashions. The area outside the walls has become a pleasant residential district.

The People. About two thirds of the Old City people are Moslems. The rest are Christians. Old Jerusalem

has no modern industries, but many handicraft workshops. These include pottery, ceramics, woodwork, copper, brass and silverwork, and weaving.

Religious and Cultural Institutions. There are 32 shrines, or holy places, in Jordanian Jerusalem. Most of them are within the walls of the Old City. The holy places include the Moslem Dome of the Rock, or Mosque of Omar, built on the site of the ancient Temple of Jerusalem, which Roman soldiers destroyed in A.D. 70. Many people believe that the dome shelters the rock on which Abraham prepared to slaughter his son Isaac. Moslems believe that the prophet Mohammed rode through the sky on his horse to pray at the rock before ascending into heaven. The Old City also has many churches, convents, and other religious buildings. The most famous Christian holy place in Jerusalem is the Church

The Old City in Modern Jerusalem is built on the site of ancient Jerusalem. High stone walls surround this historic area.





The Ancient City of Jerusalem Is a Holy City for Christians, Jews, and Moslems.

Israel Office of Information

of the Holy Sepulchre. Several Christian faiths share this shrine. Many persons believe that it is built over Calvary, or Golgotha, where Jesus was crucified. In the 1950's, efforts were begun to restore the church, which had deteriorated through the years.

The buildings of the Hebrew University of Jerusalem and the Jewish National Library are located on Mount Scopus. Nearby is the Hadassah University Hospital, which was built to be the most modern hospital in the Near East. These buildings have not been in use since this section of Jerusalem was conquered by Jordan.

Another fine building outside the Old City is the Rockefeller Museum. It contains collections of ancient objects dug up by archaeologists.

Communication. Jordanian Jerusalem has no railroad connections. Roads lead from it to the chief cities of Jordan. There is also an airport nearby.

The New City is the capital of Israel and the center of the national government and its chief agencies. Its first buildings were erected in 1858. The population of New Jerusalem has more than doubled since the State of Israel was established in 1948. New suburbs are spreading westward over the hills. Most of the buildings are of gray or pink stone which comes from quarries on the city's outskirts.

The People. Most of the inhabitants of the New City are Jews. The rest are Christians and Moslems. About half the Jews are immigrants who have come to Israel since the state was established.

About 50 factories are in New Jerusalem. The manufactures include shoes, chemical and drug products, metal wares, textiles, plastics, leather goods, and diamond polishing. Handicrafts include silverware, ceramics, embroidery, and woodwork.

Religious and Cultural Institutions. There are three chief Holy Places in the Israeli section of Jerusalem. One of them is Jewish, one Christian, and one Moslem. There are many synagogues, churches, and convents. The Hebrew University is scattered among a number of temporary buildings in various parts of the city. The National Library is one of the best in the Near East. The YMCA is one of the finest buildings of the city. An American gave the money to build it. The Bezalel National Art Museum is located in Jerusalem. There are also two academies of music. The Jerusalem Biblical Zoological and Botanical Gardens, outside the city, displays animals mentioned in the Old Testament.

Northwest of New Jerusalem is *Government City*. Most of the agencies of the Israeli government are here.

Communication. The New City is connected by rail and highways with the coastal plain. From there, it is linked by rail, road, and air with the rest of Israel.

History. Relics found in Jerusalem show that there was a settlement here about 2,500 years before Christ was born. But the known history of the city begins about 1500 B.C. Stone tablets discovered in Egypt date back to that time. These historical stones refer to the city as *Urusalimmu*, which means *city of peace*.



Fritz Henle

The Great Mosque of Omar in Jerusalem stands on ground once occupied by an ancient Jewish temple. Jerusalem is a shrine

not only to Christians but also to a great number of Jews and Moslems. It has many churches of each faith.



Russell Wright

A Giant Menorah in Jerusalem pictures the highlights in the history of the Jewish people. The symbolic candlestick of Israel, standing on King George Avenue, was a gift from Great Britain.

In about 1000 B.C., the Hebrew King David captured Jerusalem. He fortified it and made it the main city of his kingdom. He chose the site for the Temple which King Solomon, his son, later built. Solomon enlarged the city.

After Solomon died, the Hebrew nation was split into two kingdoms, Israel and Judah. Jerusalem was the capital of Judah. Before 586 B.C., it was attacked five times. In that year King Nebuchadnezzar of Babylonia besieged the city. He captured it and destroyed the city and Solomon's Temple. He took many of the Jews to Babylonia as captives. They were not allowed to return for about 50 years, after King Cyrus of Persia conquered the Babylonian empire.

The Jews built the Second Temple when they returned to Jerusalem. It was not as grand as the first. But the period of the Second Temple was a time of important developments in religious and social history.

In 332 B.C., Jerusalem fell under the rule of the Macedonian king, Alexander the Great. Later, it was ruled by the Ptolemies, kings of Egypt. In 168 B.C., the city was destroyed by Antiochus, the Greek ruler of Syria. But the Jews under the Maccabees fought off their enemies and rebuilt Jerusalem. See **MACCABEES**.

Jerusalem remained prosperous until the Romans conquered it in 63 B.C. The Romans set up Herod as king, and he ordered the rebuilding of the Temple. This was the Third Temple, and the last. Shortly after the death of Jesus, the Jews started fighting against Roman rule. After six years of bitter fighting the Jews were completely crushed. In A.D. 70, the Roman Emperor Titus ordered the city and the Temple destroyed. Only part of one wall of the Temple remained standing. It still stands in the Old City. It is called the Wailing Wall, because many Jews have never ceased to mourn the destruction of Jerusalem and the Temple. Because it is now owned by the Arabs, Jews no longer are permitted to pray there. See **WAILING WALL**.

The Roman Emperor Hadrian rebuilt Jerusalem.

He renamed it *Aelia Capitolina*, after a Roman emperor and a Roman god. He forbade the Jews to enter the city. Hadrian's successor, Constantine, became a Christian and made Jerusalem into a Christian shrine. He gave the city its old name. Constantine ordered the building of the Church of the Holy Sepulchre.

In A.D. 615, the Persians destroyed much of Jerusalem, and in 636, it was conquered by the Moslems under the Caliph Omar. At this time the famous Moslem Mosque of Omar was built on the site of the ancient Jewish Temple.

In 1099, the Christian Crusaders from Europe took Jerusalem. Less than a hundred years later the Moslems under Saladin reconquered it. In the 1200's, Jerusalem again came under Crusader rule. But soon it passed once more into Moslem hands. From 1239 until 1917, it was conquered in turn by the Tartars, Egyptians, Mamelukes, and Ottoman Turks.

In World War I, the British captured the city from the Turks. British troops under General Allenby took Jerusalem in 1917 without firing a shot. The League of Nations gave Great Britain a *mandate*, or permission to govern Palestine. For the first time since its destruction by the Romans, Jerusalem again became the capital of Palestine.

The Balfour Declaration in 1917 said Palestine should become a Jewish country. Many thousands of Jews from all parts of the world flocked to settle in Palestine, many in Jerusalem (see **PALESTINE** [World War I and After; World War II and the Partition Plan]). After the Israel-Arab war of 1948, Jerusalem was divided between Jordan and the new state of Israel.

Some United Nations members proposed that Jerusalem be put under international control. But both Israel and Jordan opposed the plan. It was declared the capital of Israel in 1950.

YEHUDA HARRY LEVIN

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Bethesda	Gethsemane	Nebuchadnezzar
Constantine I,	Israel	Palestine
the Great	Jesus Christ	Solomon
Crusades	Jews	Wailing Wall
Cyrus the Great	Judea	Zion
David	Mount of Olives	Zionism
Easter (In the		
Middle East)		

JESSAMINE. See **JASMINE**.

JESSELTON (pop. 11,704) is the capital and chief port of the British colony of North Borneo. It is situated on a small inlet of the South China Sea. For location, see **INDONESIA** (color map). Jesselton is a railroad and trading center for an agricultural and stock-raising area. The British founded Jesselton in 1899. It is the second largest town in the colony.

JESTER was a person whose duty it was to amuse the family of a king or nobleman. The jester was sometimes also called the *court fool*. He performed antics very much like those of today's clown. Watching him, a king might easily forget the troubles of his kingdom. The jester wore a checkered costume of many colors. From his close-fitting cap, and sometimes from his long, pointed shoes, dangled bells which tinkled as he danced and pranced about.

It is not known when jesters first appeared. There may have been jesters in Britain during the time of the Saxons. We do know, however, that licenses were issued to jesters in the 1600's. Before that, a history of William



Court Jesters Often Wore Caps and Bells.

the Conqueror (who lived in the 1000's) names the ruler's court fool, Goles. Many kings who followed William had jesters. Henry VIII's jester, Will Somers, was a gift from Cardinal Wolsey. The famous painter Holbein made a portrait of Saint Thomas More's jester.

The court jester enjoyed an unusual position with his employers. He was almost a member of the family, taking part in private gatherings, sharing family secrets, and playing with the children. It is easy to understand how Shakespeare's Hamlet felt when the skull of his father's jester, Yorick, was uncovered by gravediggers. Hamlet describes him as "a fellow of infinite jest, of most excellent fancy." Besides Yorick, Shakespeare made famous another jester, in his play *King Lear*. To be funny, most jesters had to be clever, and some are believed to have given their kings advice. GLENN HUGHES

JESUIT, JEZ yoo it, is a member of a Roman Catholic religious order of men called the *Society of Jesus*. Jesuits take vows of poverty, chastity, and obedience. They must undertake any project the pope proposes to them. They are forbidden to fill any high office in the church. A few have become archbishops and cardinals, but only at the pope's command. Saint Ignatius Loyola founded the order in 1534, and Pope Paul III approved it in 1540. Saint Ignatius' constitution of the order is still in force, except for slight changes. The Jesuits work for the glory of God, defend the Roman Catholic faith against heresy, engage in missionary work, and educate the young.

Divisions of the Order. The general and higher officials of the society are chosen from the *professed fathers*, or priests with full vows. The *helpers*, or *coadjutors*, in-

clude the lay brothers who perform the minor duties of the institutions. Those preparing to become priests are known as *students*, or *scholastics*, and those undergoing probation to enter the order are called *novices*. Supreme authority rests with the *father general* in Rome.

Educational Work. The Jesuits have been generally regarded as the leading and most scholarly of Catholic educators. They have established numerous schools and colleges wherever they went. They developed original and highly successful methods of teaching the classics. Their scientific courses achieved high standards of quality. For example, such great astronomers of the 1800's as De Vico, Perry, and Secchi were Jesuits. In the field of education, the society reached its height about 1750. At that time it controlled 728 colleges, with about 300,000 students. It now has about 220 colleges throughout the world. In the United States it has a large number of educational institutions, including Georgetown, Fordham, and Saint Louis universities, Boston College, and the College of the Holy Cross.

Missionary Work. The society has always been one of the most active of missionary groups. The members have often faced danger and made sacrifices to spread their religious beliefs. Saint Francis Xavier, the friend and companion of Ignatius, made many converts in remote parts of India and Japan. At a later period, a band of Jesuits made their way into the heart of China, and also entered other nations. In America, Fathers Garnier, Jogues, Lallemand, and others died as martyrs in the course of their work. Father Marquette, who explored the Mississippi region, endured sufferings and hardships during his work with the Illinois Indians of the Mississippi Valley. Father François Charlevoix (1682-1761) explored French colonies in America, and for 22 years was editor of a historical and scientific journal, *Le Journal de Trévoux*.

The Jesuits have often been seriously attacked for their activities. Yet in spite of this, they have contributed effectively to the work of the Catholic Church throughout the world. They numbered about 22,000 at the time of their suppression. The total for the world is now about 32,000. Of these, about 7,500 are in the United States and about 1,200 are in Canada. Approximately 1,100 American Jesuits are on foreign missions throughout the world. About 5,500 Jesuits from all countries are on foreign missions.

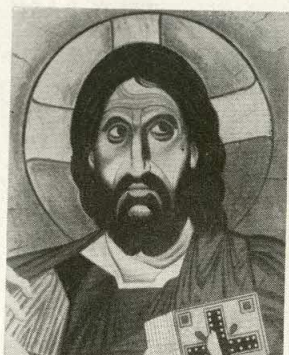
Early Development. Soon after its founding the order quickly spread through Europe. It became the strongest of the forces opposing the Protestants, and was closely associated with the Counter Reformation. (See COUNTER REFORMATION.) But the Catholic heads of many European countries opposed the Jesuits. In 1773, Pope Clement XIV yielded to their pressure. He suppressed the order in all countries except Russia, and, to a lesser extent, Prussia. But the Jesuits were too well remembered to suffer more than a temporary check. In 1801 Pope Pius VII revived the order in part, and in 1814 it was restored to its former position. FULTON J. SHEEN

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De Smet, Pierre Jean	Roman Catholic Church
Gonzaga, Saint Aloysius	Xavier, Saint Francis

JESUIT BARK. See QUININE.

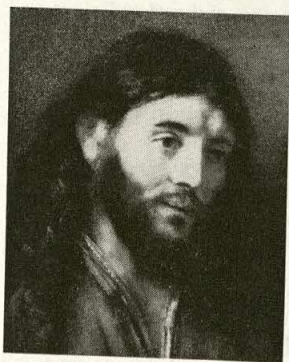
JESUS CHRIST



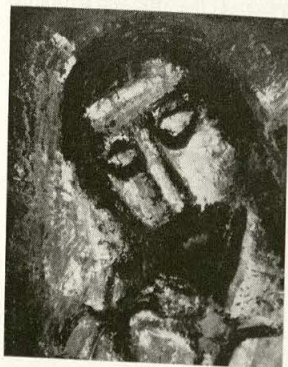
by a Byzantine painter,
from *Together Magazine*



by Aelbrecht Bouts, from *Three Lions*



by Rembrandt, courtesy of the Metropolitan Museum of Art; the Mr. and Mrs. Isaac D. Fletcher Collection. Bequest of Isaac D. Fletcher, 1917



detail from a painting by Georges Rouault, from the Museum of Modern Art

JESUS CHRIST was the founder of the Christian religion. Christians believe that He is the Son of God who was sent to earth to save mankind. Even many persons who are not Christians believe that He was a great and wise teacher. He has probably influenced humanity more than anyone else who ever lived.

The name Jesus in Hebrew means *Savior*, or *help of the Lord*. His followers called Him *the Messiah*, or *anointed of the Lord*. The name Christ comes from the Greek word *Christos*, which means *anointed one*.

The teachings of Jesus united people from many lands into a great religious movement that is now the most widespread in the world. Mohammed, the founder of Islam, regarded Jesus as a great prophet and adopted many of His ideas. Democratic beliefs in equality, responsibility, and care for the weak owe much to Jesus' lessons in brotherhood and love.

Early Life

Five short books of the New Testament tell nearly all we know of the life and teachings of Jesus. These books are the Gospels of Matthew, Mark, Luke, and John, and the Acts. The word *Gospel* means *good news*. Matthew and John were two of Jesus' disciples. They knew Him and worked with Him during the last few years of His life. Many scholars believe that they wrote the Gospels named for them. Some question whether Mark and Luke knew Jesus personally, or whether they knew men who had known Him. The Gospels give the main facts about Jesus' life. The Acts tell what happened during the next 30 years. The *Epistles*, or letters, of Paul also tell something of Jesus, and a few of His sayings are found elsewhere. Non-Christian records of Christ and the times in which He lived are found in the writings of Josephus, who was born about A.D. 37; Pliny the Younger, who wrote about the year 112; Tacitus, who wrote about 117; and Suetonius, who wrote about 120.

The Nativity. Jesus was born during the lifetime of Herod the Great, whom the Romans had appointed to rule over Judea. Calendars are dated from what was supposed to have been the year of Jesus' birth. But the people who worked out the calendar made a mistake in the date. Herod died in 4 B.C., so Jesus must have been born earlier than that. No one knows at what time of year Jesus was born. But, since the 300's, Christians have celebrated December 25 as Christ's birthday. See **CHRISTIAN ERA**.

The Virgin Mary was Jesus' mother. She and her husband Joseph, a carpenter, lived in Nazareth. This town was in the province of Galilee in northern Palestine. The Gospels tell how the angel Gabriel appeared to Mary and announced that her child would be the Son of God and the promised Messiah. Some time before Jesus was born, Mary and Joseph went to Bethlehem to have their names listed in a census. Bethlehem was a small town in southern Judea. Mary and Joseph had to find shelter in a stable. Jesus was born there, and Mary made a cradle for Him in a manger.

The Gospels describe how shepherds near Bethlehem saw angels in the sky and heard them sing, "Glory to God in the highest and on earth peace, good will toward men" (Luke 2: 14). Some translations of the Bible say "to men of good will." Another story tells that wise men from the East came to find the newborn Messiah. At first, they asked for Him at Herod's court. Later, they found Him by following the light of a star to Bethlehem. They gave Jesus gifts of gold, frankincense, and myrrh. Herod had told them to return to him after they found the Christ child, but they did not do so. Herod became angry and afraid of this new "King of the Jews." He ordered all boys of Bethlehem,

Portraits of Jesus Christ are designed to honor Him, but no one knows exactly what He looked like. Each age has its own interpretation. A Byzantine artist of the 1000's saw Christ as a stern judge. Aelbrecht Bouts, in the early 1500's, and Rembrandt, in the 1600's, portrayed a sorrowing, compassionate Christ. Georges Rouault, in the 1930's, showed Christ mocked by soldiers.



Courtesy the Prado, Madrid

Christ Carrying the Cross, a painting by El Greco, shows Jesus on His way to Calvary. The Romans made Him carry the cross, but later forced Simon, a passerby from Cyrene, to carry it instead.



The Metropolitan Museum of Art, Rogers Fund, 1938

The Life of Christ has been a favorite subject for artists. An unknown Spanish wood carver of the 1400's portrayed Jesus, Mary, and Joseph on *The Flight into Egypt*, left. The Holy Family fled after Joseph was warned in a dream that Jesus' life was in danger. El Greco painted this *Pietà* (which means *pity*), below, in 1585. Mary mourns over the body of Jesus at the foot of the cross. Mary Magdalene and the apostle John look on in sorrow.



Reproduced by permission of Mr. and Mrs. Stavros Niarchos, Athens, Greece. Color photograph courtesy of M. Knoedler and Company, New York

Santa Maria delle Grazie, Milan



2 years old and younger, put to death. An angel appeared to Joseph in a dream and warned him. Then Joseph took Mary and the infant Jesus and fled to Egypt. They returned to Nazareth after Herod died.

Childhood. Historians know little about the childhood of Jesus. Luke relates that when He was 12 years old, He went to Jerusalem with His parents for the feast of Passover. There He amazed the scholars in the Temple with His religious understanding. The only other remark Luke makes about Christ's childhood is that "the Child grew and waxed strong in spirit filled with wisdom: and the Grace of God was upon Him" (Luke 2: 40). Jesus grew up in Nazareth and probably helped Joseph in his work as a carpenter.

Public Life

Ministry. Jesus began to reveal the special mission of His life after He was 30 years old. His relative, John the Baptist, prepared the way for Him by preaching repentance and by baptizing those who accepted his message. Jesus went to John to be baptized.

Jesus went into the desert to prepare for His mission. The devil tempted Him to use His powers as the Son of God so that He could rule the world as a king. But Jesus knew that He must preach about the Kingdom of God, and He returned to Galilee. He chose Capernaum, near the Sea of Galilee, as His headquarters. Soon His first disciples, Simon Peter, Andrew, James, and John, joined Him. Later, Jesus chose Bartholomew (often thought to be the same as Nathanael), James the Less, Judas Iscariot, Thaddeus (generally also called Jude), Matthew, Philip, Simon, and Thomas to help Him.

Jesus carried out most of His ministry in Galilee. But He also visited Samaria, Jerusalem, and areas north of Galilee. He announced the Kingdom of God and taught that He had the power to forgive sins. He treated Gentiles as kindly as He did Jews. Many of His teachings spoken at this time are in the *Sermon on the Mount*, given in complete form in Matthew 5, 6, 7.

The teachers of Galilee did not trust Jesus, because He did not avoid sinners. They also feared Him because He seemed to change accepted practices, such as conduct on the Sabbath. But His disciples believed in Him. When Jesus asked them who they thought He was, Peter said, "Thou art the Christ, the Son of the living God" (Matt. 16: 16). Soon after that, Peter, James, and John had a vision of Jesus in glory.

The Miracles. The Gospels tell of 36 miracles that Jesus performed. He did not work any miracles for His own benefit. His miracles proved His authority to His disciples and attracted many converts. His first miracle was at a wedding feast at Cana. When His host ran short of wine, Jesus turned water into wine. He performed another early miracle at Lake Gennesaret. Jesus had Simon Peter catch so many fish in his net that their boat almost sank (see MIRACLE [picture, *The Miraculous Draught of Fishes*]). On another occasion, Jesus blessed five loaves of bread and two fishes, and divided them among 5,000 men, women, and children so that everyone had enough to eat. Jesus once amazed His disciples by walking on the sea in a storm.

Many stories in the Gospels speak of Jesus healing the sick and the blind. John tells how Jesus brought

His friend Lazarus back to life after Lazarus had been dead and buried four days. Jesus used His power to perform miracles to show the love and mercy of God.

The Passion

The last few months of Jesus' life led up to what Christians call *the Passion*, or His suffering for all mankind. Jesus had made many enemies in Jerusalem, and He knew it would be dangerous for Him to go there. But He believed it was His duty to do so. He was determined to preach the good news of the Kingdom and of forgiveness. Jesus felt that He had come to earth to save other people by giving His own life.

The Last Supper. Jesus arrived in Jerusalem for Passover week. He made a triumphal entry into the city on Sunday. The people were grateful for His healing and teaching, and many believed that He would bring a better life to the Jewish nation. As He passed by, they cheered Him and covered His path with clothing and branches of palm trees. The priests became frightened and angry when Jesus went into the Temple and drove out the men changing money or selling doves. Jesus taught that the house of God must be for prayer, not for making money.

During the next few days, Jesus spent part of His time teaching in Jerusalem. The rest of the time, He meditated and prayed in Bethany, just east of the city. He attended the Last Supper with His twelve disciples in Jerusalem on Thursday night. Three of the Gospels say that this was the Passover meal. During the supper, Jesus told His disciples that one of them would betray Him. Then He promised to meet them again in the Kingdom of God. As He gave them bread and wine, He said, "This is My Body," and, "This is My Blood." The Christian *Communion*, or Lord's Supper, originated from this meal (see COMMUNION).

The Trial. Later on Thursday night, Jesus went to the Garden of Gethsemane, on the slope of the Mount of Olives just opposite the Temple. Three disciples—Peter, James, and John—accompanied Him, but soon fell asleep. Jesus prayed in agony of spirit, but submitted Himself to God's will. A band of armed men came to the garden to arrest Jesus as He prayed. Judas Iscariot, one of the disciples, pointed Him out. Judas had betrayed his Master for 30 pieces of silver. Matthew says that Judas later hanged himself.

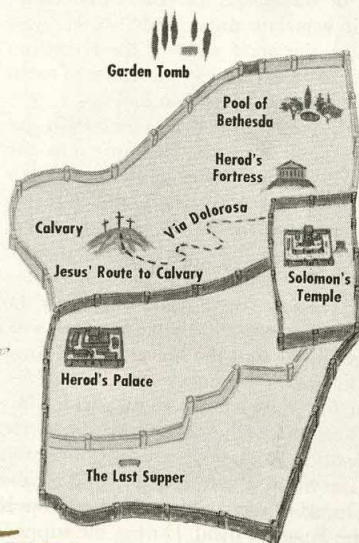
The men took Jesus to the high priest's house. Jewish law did not allow the Sanhedrin, the supreme Jewish court, to meet at Passover time, or to condemn a man to death at night. But some members of the Sanhedrin decided to question Jesus anyway. They first accused Him of threatening to destroy the Temple, but the witnesses disagreed. Finally they asked Jesus if He was the Messiah, the Son of God and King of the Jews. Jesus said He was, and they said He had *blasphemed*, claiming that He made Himself God.

On Friday morning, the Jewish leaders took Jesus to Pontius Pilate, who governed Judea as a Roman province. They charged Him with treason against Rome for claiming to be King of the Jews. Because He was a Galilean, Pilate sent Him to Herod Antipas, son of

◀ **The Last Supper**, as painted by Leonardo da Vinci, shows the heads of the twelve apostles, left to right: Bartholomew, James the Less, Andrew, Judas, Peter, John, Thomas, James, Philip, Matthew, Thaddeus, and Simon.

THE LAND JESUS LIVED IN

Jerusalem in Jesus' Time lay within the strong walls shown in dark gray. The present walls of the city, shown in light gray, stand farther to the north.



As a Fisher of Men, Jesus called Simon Peter and Andrew to follow Him.

Capernaum •

• Cana

• Nazareth

As a Wedding Guest, He made wine from water.

Sea of Galilee

The Sermon on the Mount expressed His basic teachings.

As a Boy, Jesus worked in Joseph's carpenter shop.

The Resurrection, for Christians, marked Jesus' victory over death.



For Baptism, Jesus went to John the Baptist at the Jordan.

✦ Jerusalem

• Bethlehem

As a Teacher, Jesus astounded His hearers in the Temple.

Dead Sea

As a Baby, Jesus was worshiped by shepherds and kings.

At the Last Supper, Jesus warned His disciples that one of them would betray Him.

As a Miracle Worker, Jesus raised Lazarus from death.

After His Crucifixion, soldiers gambled for His clothing.

Herod the Great, who ruled Galilee. Luke says that Herod mocked Jesus, dressed Him in a kingly robe, and sent Him back to Pilate.

It was the custom for a Roman governor to release one Jewish prisoner at the Passover season. Pilate took Jesus and a condemned murderer named Barabbas onto the steps of his palace and told the crowd to choose which one should go free. The mob turned against Jesus and chose Barabbas. Pilate then sentenced Jesus to die on a cross. Crucifixion was a common Roman form of execution, usually for the lowest criminals.

The Crucifixion. The Roman soldiers mocked Jesus for claiming to be King of the Jews. They dressed Him in a red robe and put a crown of thorns on His head and a reed in His hand. Then they beat Him and spat on Him. They forced Him to carry His own cross like a criminal. Because He was so exhausted, they ordered a man named Simon from Cyrene to take the cross and carry it part of the way. The Romans nailed Jesus to His cross outside the city, on a hill called Golgotha, or Calvary. John says that they wrote on the cross the words *Jesus Nazarenus Rex Iudaeorum*, or Jesus of Nazareth, King of the Jews. This inscription was written in Latin, Greek, and Hebrew. They set the cross up between those of two thieves. Before Jesus died, He called out, "Father, forgive them, for they know not what they do" (Luke 23: 34). During His suffering He cried, "My God, My God, why hast Thou forsaken me?" (Matt. 27: 46). After three hours, Jesus died. Joseph of Arimathea and Nicodemus took His body to a new tomb which they sealed with a stone.

The Resurrection. The Gospels tell how Mary Magdalene went to Jesus' tomb on Sunday morning. She found the stone rolled away and the tomb empty. After that, Jesus appeared to her and to Simon Peter. Two disciples saw Him on the road to Emmaus. The Gospels say that the 11 faithful disciples met with Him first in Jerusalem and then in Galilee. He taught them during the next 40 days. Then He rose to heaven.

The Teachings of Jesus

Jesus often explained His thoughts by means of *parables*, or short stories that taught lessons (see PARABLE). For example, *The Prodigal Son* (Luke 15: 11-32) tells of a father's great joy when his wayward son returns home. Jesus used this parable to teach of God's love and forgiveness for sinners who repent. The Gospels mention about 70 parables. Much of what Jesus taught was already in the Hebrew Bible or was part of Jewish tradition. But Jesus selected certain ideas to emphasize, and added teachings of His own. Jesus believed that God was preparing a new state of things on earth. In it, all human beings would live as children of God. Jesus spoke of this new era as *the Kingdom of God*, and said that He was God's agent to announce and bring this Kingdom. Jesus fought sin, particularly hypocrisy and cruelty to the weak. But He did not despise sinful persons. He was willing to heal and forgive even before people said they were sorry. Jesus believed that God's power was greater than sin. He taught that repentance and faith could save men.

Jesus offered His followers rules to live by. He taught people to love God and their neighbors with all their hearts and minds. He stressed that each person should treat others as he wished others to treat him

(see GOLDEN RULE). He told His hearers not to fight back if attacked. "Whosoever shall smite thee on thy right cheek, turn to him the other also" (Matt. 5:39).

Christians believe that Jesus is far more than a great teacher or a genius. Most Christians regard Him as God, the Son of God in a special sense not shared by anyone else. They accept the doctrine of the Blessed Trinity as one of Jesus' major teachings (see TRINITY). This doctrine states that there are three Divine Persons—Father, Son, and Holy Spirit—united in one God. As the Son, Jesus is equal with the Father. He had absolute authority for His teachings and absolute power to forgive sins and give eternal life. Jesus spoke of Himself as the Son of Man and the Son of God. The title *Son of Man* expressed His complete human nature, but it also meant to His followers that in the future He would come to judge the world. The title *Son of God* expressed His Divine nature in the unity of God.

The Spread of Christianity

The Resurrection of Jesus convinced the disciples that Jesus was the heavenly Lord and the Son of God, as well as the Messiah on earth. Peter and the others converted hundreds of Jews to the new faith. These early Christians often met in the Temple and in synagogues in Palestine. Christianity soon spread as far as Damascus and Antioch. After Paul (or Saul) of Tarsus was converted, he brought Christ's teachings to Gentiles as well as to Jews. For many years, Christianity was considered a part of Judaism. Roman authorities feared revolutions and began to persecute the Christians. The emperor Nero started the first great persecution in Rome in A.D. 64. But the religion continued to spread.

SHERMAN E. JOHNSON and FULTON J. SHEEN

Related Articles. See the heading The New Testament in the RELIGION section of the READING AND STUDY GUIDE for places, events, terms, and people connected with the life of Christ. See also the following articles:

Christianity	Good Friday	New Testament
Christmas	Gospels	Painting (many
Cimabue, Giovanni	Holy Grail	color reproductions of famous
(picture)	Manet, Edouard	paintings)
Dead Sea Scrolls	(picture)	Resurrection
Easter	Miracle	Shroud of Turin
Gentile	(picture)	
God		

Outline

- I. Early Life
- II. Public Life
- III. The Passion

- IV. The Teachings of Jesus
- V. The Spread of Christianity

Questions

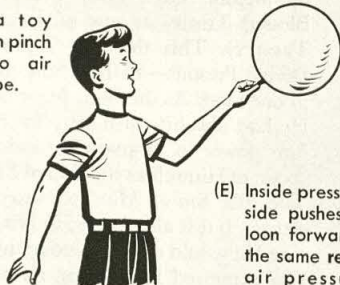
- What does the name Jesus Christ mean?
- What did Jesus mean by the Kingdom of God?
- Which books of the Bible tell about the life of Jesus?
- Name the cities in which Jesus (1) was born, (2) grew up, (3) was brought to trial.
- Who started Jesus on His public ministry?
- What were (1) the parables? (2) the Passion?
- Describe two miracles that Jesus performed.
- What did Jesus tell His disciples at the Last Supper?
- Who were (1) Simon of Cyrene? (2) Pilate?
- How did Christianity spread?

JET is a kind of coal so hard and uniform that it can be carved and polished to look like black glass. It is used to make buttons and costume jewelry. Jet is found in England, France, Germany, and Spain.

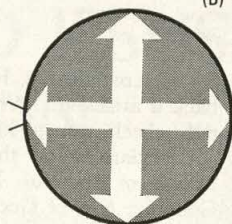
YOU CAN JET-PROPEL A TOY BALLOON



(A) Blow up a toy balloon. Then pinch the stem so air cannot escape.



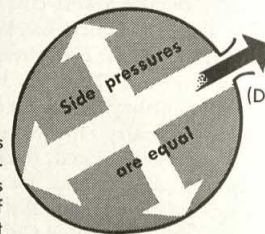
(E) Inside pressure on this side pushes the balloon forward. This is the same reaction of air pressure that drives a jet engine forward from within.



(B) The air pressure inside the closed balloon is equal in all directions.



(C) But if you let go, the balloon will dart across the room.



(D) Escaping air releases inside pressure on this side. This is the same as the exhaust action of a jet engine.

JET PROPULSION is a principle used to drive aircraft and missiles. It has brought about a dramatic revolution in flying. Planes without propellers can knife through the sky faster than sound travels through the air. Pilotless missiles, spouting flame and smoke, are driven hundreds of miles above the earth.

Jet-propelled aircraft are among the newest of man's inventions. Yet the first simple jet engine was invented more than 2,000 years ago. It took all the years between then and now for men to learn how to put jet power to use. Scientists believe that in the future jet propulsion may make it possible for men to fly to other planets (see **ROCKET; SPACE TRAVEL**).

How Jet Propulsion Works

The Principle. You can understand the force, or *reaction*, which moves a jet engine if you watch a small floating log when a frog jumps off it. The action of the legs of the frog sends him through the air in one direction. His legs apply a reaction to the log, causing it to move through the water in the opposite direction.

A jet engine drives forward by using a similar reaction. The engine takes the place of the log. The jet exhaust takes the place of the frog. When the jet exhaust shoots backward into space, the reaction to it drives the engine forward. For this reason, jet engines sometimes are called *reaction-type* engines.

Many persons mistakenly believe that jet propulsion is caused by the exhaust gases "pushing" against the outside air. This is not so. In fact, jet propulsion will work just as well in a vacuum, as long as oxygen is provided to burn the engine's fuel.

The English scientist Sir Isaac Newton in the year 1687 first stated the principle used by jet-propulsion engines as one of the laws of motion: *To every action there is an equal and opposite reaction.*

How Jet Engines Produce Power. Jet engines build up inside pressure by two methods: (1) burning a fuel that gives off hot gases, and (2) squeezing, or compressing, air that is mixed with the fuel. Some kinds of jet engines use only the first method, others use a com-

bination of the two. The fuel can be gasoline or some other chemical combination such as hydrogen and boron.

After a jet engine builds up inside pressure, it exhausts burned gases from its tail pipe in a stream called the *jet*, or *jet exhaust*. The reaction inside the engine to this jet exhaust drives the engine forward.

Thrust. The forward-driving force of a jet engine is measured in pounds of *thrust*. The thrust remains about the same at all flying speeds, which makes a jet engine particularly useful in high-speed aircraft. At the same time, the jet engine's horsepower, or ability to do work in a given period of time, increases at higher flying speeds. This is just the opposite of a propeller-and-piston engine whose horsepower remains about the same at high flying speeds, but whose thrust decreases.

One pound of thrust is equal to one horsepower at a speed of 375 miles an hour. At this speed the horsepower of a jet engine of 3,000 pounds thrust would be just equal to a propeller-and-piston engine of 3,000 horsepower. But if the speed through the air is increased to 750 miles an hour, a jet engine of 3,000 pounds thrust will put out 6,000 horsepower. If a propeller-and-piston engine of 3,000 horsepower is driven through the air at 750 miles an hour, its thrust will drop to 1,500 pounds, even if its propeller efficiency is 100 per cent.

The following formula may be used to find the horsepower of an engine when the thrust and the air speed in feet per second are known:

$$\text{Horsepower} = \frac{\text{Thrust (lbs.)} \times \text{Air Speed (ft. per sec.)}}{550}$$

Here is an example of the use of this formula. You have a jet engine of 5,000 pounds thrust and you want to know how much horsepower it will develop while flying at 750 miles an hour (or 1,100 feet a second). You multiply 5,000 by 1,100, divide by 550, and find that the engine will develop 10,000 horsepower.

In the usual type of propeller-driven airplane, the fuel is burned inside the engine and the power is supplied to a propeller by a rotating shaft. The propeller produces thrust by moving a large amount of air at a low

speed, and with little increase in pressure. In fact, the air is moved backward at a speed much lower than the airplane's speed. Thus, little energy is left in the air, and efficient flight at low speeds is possible. The jet engine produces thrust by moving a relatively small volume of gases at high speed. The speed of the jet exhaust must be high, since the amount of gas in the jet exhaust is much smaller than the amount of air moved by the propeller. This leaves a large amount of energy in the jet exhaust and the jet plane must fly fast in order to operate efficiently.

Types of Jet Engines

Turbojet is the most widely used jet engine. Most military and commercial jet airplanes are powered with turbojets. A turbojet is made up of a compressor, combustion chambers, a turbine, and a tail pipe, or exit nozzle, through which the jet exhausts. Turbojets produce from 3,000 to 10,000 pounds of thrust.

Two kinds of compressors may be used in turbojets. (1) A *centrifugal-type* compressor squeezes the air by bringing it into the center of a rapidly spinning wheel which throws the air toward the rim. There it enters a nearly circular expanding passage where its speed decreases and its pressure increases. (2) An *axial-type* compressor has several disks with a large number of small winglike blades around their rims, as in an electric fan. These disks are attached to a shaft that spins at high speed. Between each pair of disks is a row of blades which do not rotate. The air flows parallel to the spinning shaft, and each row of blades compresses the air a little higher than the pressure produced by the preceding row.

Both types of compressors raise the pressure of the air from three to six times after it enters the engine's air inlet. They spin around at speeds of 10,000 to 15,000 revolutions a minute.

After the air is compressed, it rushes into a set of combustion chambers. The air is mixed with fuel and burned. This creates greatly expanded hot gases which rush toward the tail pipe. Before these gases escape from the engine, they turn a turbine wheel which spins the compressor. This uses energy from the exhaust gases. This turbine wheel must be made of materials which can withstand temperatures as high as 1600° F. from the hot gases. See **TURBINE**.

Part of the energy which is left in the gases after they pass through the turbine produces thrust, and part is lost in the jet exhaust.

To obtain a large thrust from a jet engine, it is necessary to have a large weight of gas exhausted at high speed. The weight of gas in the jet exhaust comes from the air and fuel taken into the engine. A turbojet takes in large amounts of air and fuel. The exact amounts depend on the altitude and flight speed, as well as on the spinning speed of the turbine and compressor. A turbojet of moderate size uses about 360,000 pounds of air each hour, or three tons a minute. It also requires about 1,000 gallons of fuel an hour. If a turbojet plane flies at 600 miles an hour, it travels only about six tenths of a mile for each gallon of fuel burned.

A turbojet engine is started by spinning the turbine with auxiliary power. A spark plug is used to start the fuel burning. After that the fuel mixture burns steadily as long as the engine keeps running.

Compared with the propeller-and-piston engine combination, a turbojet has advantages of lighter weight, smaller size, more power, and higher flight speeds. It has little vibration. It has the disadvantage of using more fuel at the lower speeds.

Turbojet with After-Burner. The thrust of a turbojet can be almost doubled by attaching an after-burner between the turbojet and the tail pipe. With after-burning, thrusts up to 12,000 pounds have been obtained. The after-burner works in a manner similar to a *ramjet* (see *Ramjet* in this article). Additional fuel is sprayed into the after-burner section and burned to raise the temperature as high as possible. The speed of the exhaust jet is thus increased. The turbojet with after-burning is used on many high-speed military airplanes.

Turboprop, or propjet, is the propeller-driving brother of the turbojet. Most of the thrust of the turboprop comes from a propeller which is driven by a gas turbine. The arrangement of the compressor, burners, and turbine wheel is similar to that of the turbojet. However, most of the energy in the hot gas is used to drive the turbine which turns the compressor and the propeller shaft. The energy left in the gas, after it passes the turbine and is exhausted, is partly used to produce thrust.

The turboprop can be made smaller and lighter than

TERMS USED IN JET PROPULSION

Afterburning is an injection of additional fuel into the tail pipe to use up excess oxygen and increase speed.

Athodyd is a technical name for a ramjet. It is a contraction of the words Aero-Thermo-Dynamic-Duct.

Beeper is a person who operates a pilotless aircraft by remote control.

Blow Torch, Flame Thrower, Squirt, Stovepipe, and Blast Furnace are slang terms for a jet airplane.

Building a Fire, or Sparking It Up, means to start a jet engine.

Burner Drag is the total drag of all the parts of a jet-engine system, including the drag of the combustion-chamber walls, the flame holders, igniters, and other jet units.

Charging Stage means the stage during which air is rammed into the air duct of a pulsejet.

Chuffing, or Chugging, is the intermittent burning of a rocket accompanied by a puffing noise.

Flame Out means the engine has stopped.

Flame Stability means that the fuel in the jet engine must burn steadily over a wide range of temperatures and pressures.

Resonant Jet, Intermittent-Firing Duct Powerplant, or Aeroresonator, are other terms meaning pulsejet.

Rough Burning means the rapid changes in pressure at the beginning of the burning of a ramjet or rocket.

Self-Piloting means a ramjet ignition system which uses part of the fuel-air mixture as a pilot flame to ignite the rest of the fuel-air mixture.

Steady Boil means that the jet engine is running smoothly.

Thermojet is any kind of jet engine which brings in air from the outside to be used in combustion.

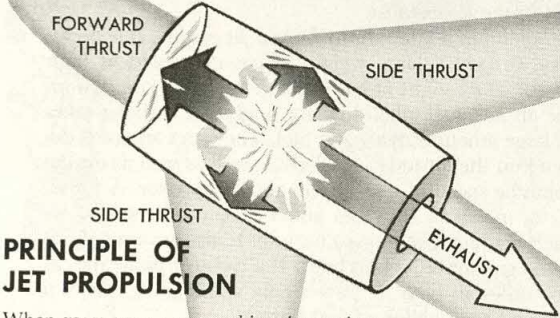
Thrusty Day is slang for a day with good jet-flying weather.

Turn Down the Wick means to cut the engine speed.

Wick Willy, Firecan Jockey, Flame Flier, or Pipe Pilot are slang terms meaning a jet airplane pilot.

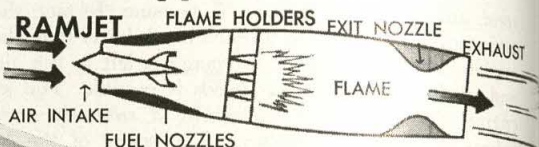
JET PROPULSION

Simple and efficient jet engines have ushered in a new age of high-speed air transportation at great heights above the earth.

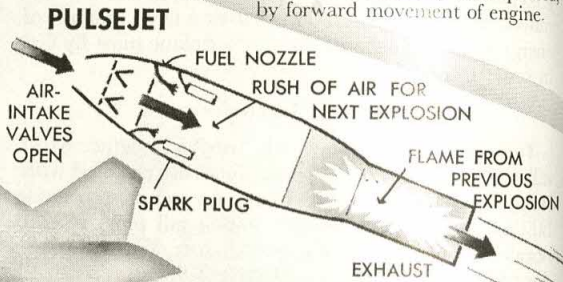


When gases are compressed in a jet engine, forces are exerted in all directions. The sideward forces, or thrusts, equalize each other because they cannot escape from the engine. But the gases escaping out the rear allow the forward force to act, and the plane moves forward. Gases may be compressed mechanically, by combustion as in an automobile engine, or by both means.

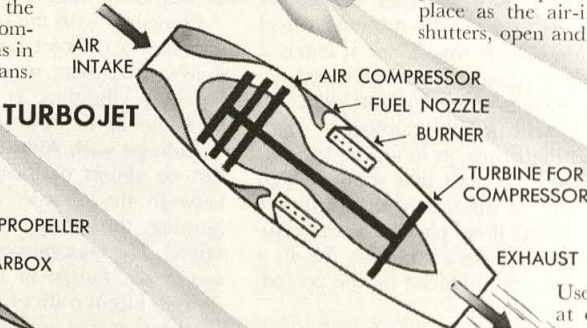
Types of Jets



The ramjet engine has no moving parts. Air is rammed, or compressed, by forward movement of engine.

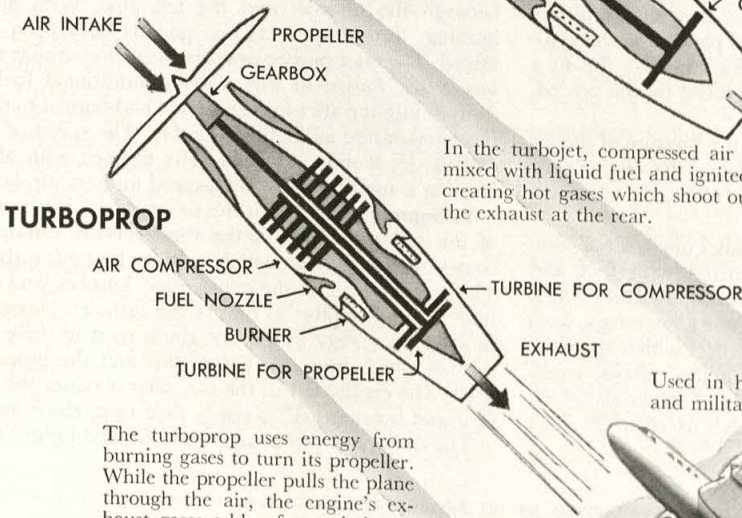


The pulsejet gets its power from the pulslike explosions which take place as the air-intake valves, or shutters, open and close.



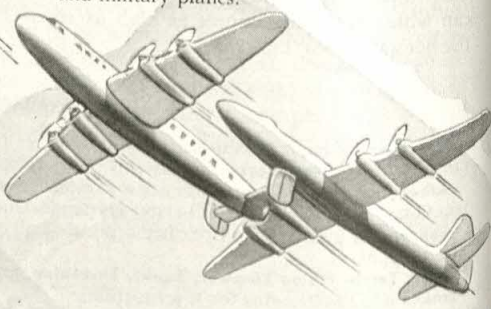
In the turbojet, compressed air is mixed with liquid fuel and ignited, creating hot gases which shoot out the exhaust at the rear.

Used in planes built to fly at or near speed of sound.

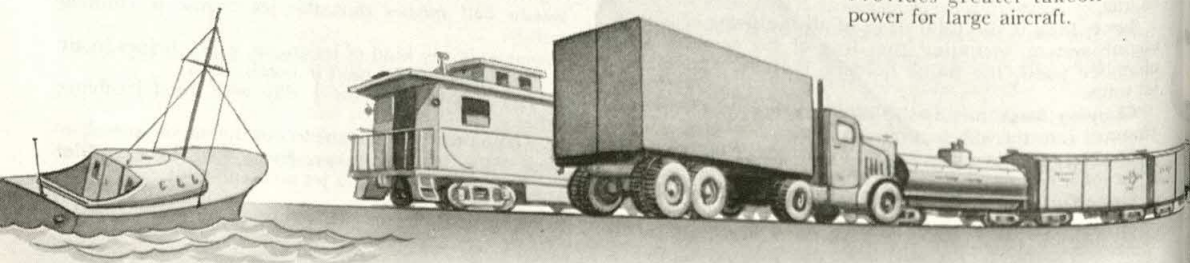


The turboprop uses energy from burning gases to turn its propeller. While the propeller pulls the plane through the air, the engine's exhaust gases add a forward thrust.

Used in heavy commercial and military planes.

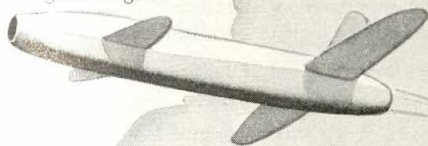


Provides greater takeoff power for large aircraft.



Uses of Jets

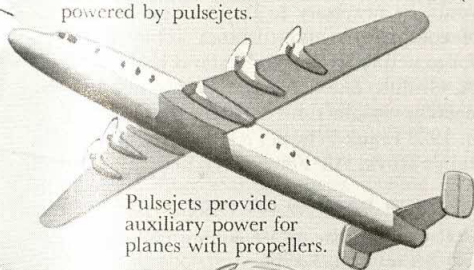
Ramjets are used in guided missiles and in gunnery-practice targets flying at great heights.



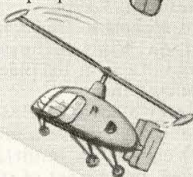
Buzz-bombs powered by pulsejets.



Pulsejets provide auxiliary power for planes with propellers.

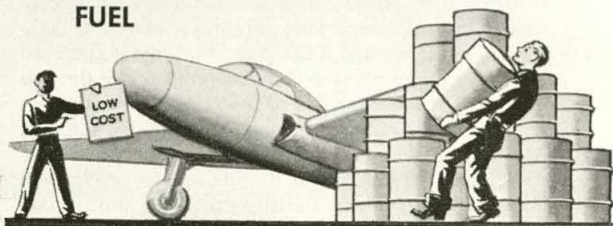


Wingtip pulsejets and ramjets are used in helicopters.



Advantages of Jets

FUEL



Jet engines burn large quantities of fuel, but they can use several kinds of low-cost fuel which piston engines cannot use.

PERFORMANCE



Greatest efficiency at high altitudes.

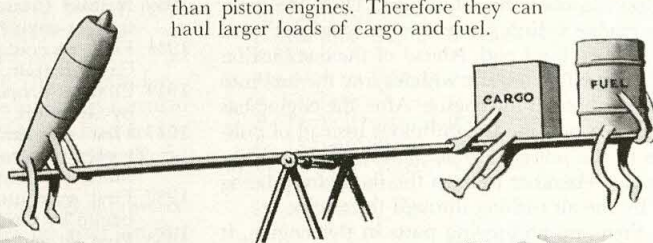
Gain altitude with great speed.

Do not require a warm up period.



CONSTRUCTION

Jet engines are lighter and more compact than piston engines. Therefore they can haul larger loads of cargo and fuel.



JET PROPULSION

piston engines. Turboprops developing 6,000 to 10,000 horsepower are more compact than piston engines producing 3,500 horsepower.

Pulsejet is a simpler engine than the turbojet. It has neither a mechanical compressor nor a turbine. It consists of a tube containing air-intake valves, a combustion chamber, and a tail pipe. The engine is started by spraying fuel into the combustion chamber through fuel nozzles. A spark plug in the combustion chamber ignites the first charge of fuel-air mixture. Air is forced into the tube entrance, causing the air-intake valves to open. This air mixes with the fuel in the combustion chamber, and burning starts when the mixture is correct. The pressure in the combustion chamber rises rapidly as a result of the burning, and the valves are forced shut. The gas from the combustion chamber then can escape only through the tail pipe. When the gas rushes from the combustion chamber, the pressure in the chamber drops so that the air pressure outside of the engine forces the air-intake valves open again. This permits air to rush into the combustion chamber again and mix with the fuel. The hot walls of the chamber set the mixture on fire. This process is repeated 50 to 250 times a second, and each time it causes an ear-shattering noise. Because of its noise the pulsejet is sometimes called a *stuttering stovepipe*. Other names for pulsejet are *aeroresonator*, *resonant jet*, and *intermittent-firing duct powerplant*.

The pulsejet is a light engine. It has few parts and is easy to build. In its present stage of development, the pulsejet burns about three times as much fuel as the turbojet. Pulsejets powered the first German guided missiles in World War II, the V-1 buzz-bombs. The pulsejet flies fast but is slower than the speed of sound.

Ramjet has the simplest construction of all the jet-propulsion engines. It has no mechanical compressor or turbine. In fact, it has no moving parts except for a few accessories. The air entering the engine is compressed by being slowed down in an air-inlet *diffuser*. This diffuser is formed by varying the diameter of a circular tube so that the high speed of the entering air is reduced, and the energy due to the motion of the air is converted into pressure. The engine gets its name from this *ramming* action of the air. The engine operates best at speeds faster than sound.

The tube forming the diffuser is continued to make a combustion chamber and a tail pipe. Thus, the main part of the engine is little more than a long pipe with a specially shaped front end. Ahead of the combustion chamber there are fuel nozzles which spray the fuel into the air moving through the engine. After the engine has been started, the burning is continuous instead of pulsing, as it is in the pulsejet. *Flame holders* are located in the combustion chamber to keep the flame from being blown out by the air rushing through the engine.

Because there are no moving parts in this engine, it can operate at higher temperatures than the turbojet. For this reason, burning can take place at approximately the best fuel and air mixture, which improves the efficiency of the ramjet engine.

A serious disadvantage of the ramjet engine is that it will not operate unless it is moving through the air fast enough to build up pressure in the combustion chamber.

Some other engine, such as a rocket, is needed to bring it up to its minimum operating speed.

Rockets do not breathe, or suck in, the surrounding air, as the other jet engines do. They carry oxygen to burn their fuel. The weight of the gas which can be released in the jet exhaust is therefore more limited than in other jet engines. Very high flying speed is necessary for a rocket to be efficient. See **ROCKET**.

Development of Jet Propulsion

Jet Pioneers. More than 2,000 years passed from the time Hero built his first jet engine until anyone used jet propulsion to fly aircraft.

An American engineer, Edgar Buckingham, made a report in 1923 to the National Advisory Committee for Aeronautics on the possible use of jet propulsion in aircraft. He concluded that jet propulsion was impractical for speeds that seemed possible at that time, which were about 250 miles an hour.

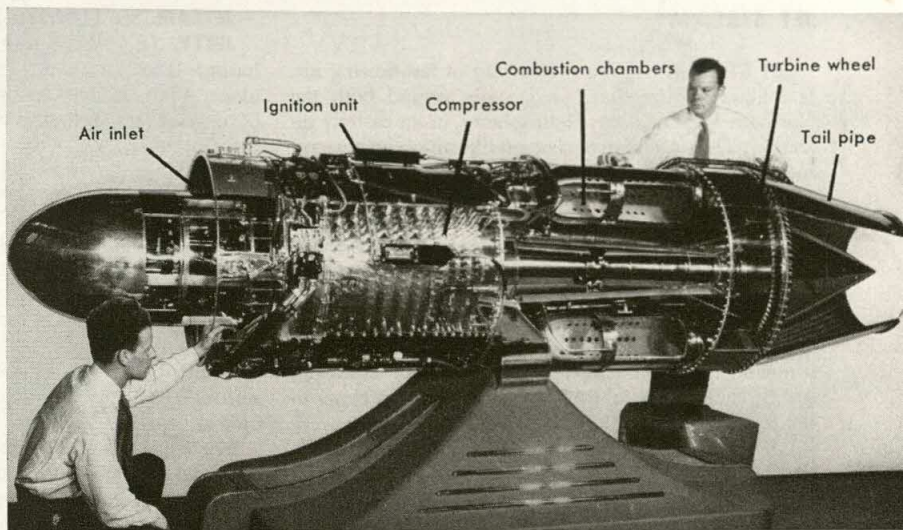
In the early 1920's, engineers began to realize that jet propulsion, and propellers driven by gas turbines, showed promise. They knew that to make practical engines it would be necessary to improve greatly the efficiency of compressors and turbines. They also saw the need for materials which could stand high temperatures. A. A. Griffith, one of the pioneers in aircraft gas-turbine research, explained his early theories in England in 1926. In 1928 Frank Whittle, a young flight cadet in Great Britain's Royal Air Force, prepared as a part of

RED-LETTER DATES IN JET PROPULSION

- c. 100 B.C. Hero built a steam jet engine, called an *aeolipile*, in Alexandria, Egypt.
- 1232 Chinese used rockets to frighten enemy soldiers.
- c. 1500 Leonardo da Vinci proposed using upward movement of hot gas in fireplace chimney to turn a spit for cooking meat.
- 1629 Italian engineer Giovanni Branca built a crude steam turbine which drove a machine.
- 1678 Ferdinand Verbiest, a Jesuit in China, built a model carriage, using a jet of steam for power.
- 1687 Sir Isaac Newton stated the law of action and reaction.
- 1791 John Barber, an Englishman, patented a gas turbine that was an ancestor of the turbojet.
- 1908 René Lorin, a French engineer, made detailed drawings of a proposed ramjet engine.
- 1926 A. A. Griffith in Great Britain described theories of using gas turbines in aircraft.
- 1930 Frank Whittle of Great Britain patented design for a jet-aircraft engine.
- 1939 Heinkel Company in Germany built and flew the first jet-engine airplane.
- 1941 First successful turbojet airplane was flown in Great Britain. Engine designed by Whittle.
- 1944 First jet-propelled fighters used in World War II by Germans.
- 1947 First supersonic (faster than speed of sound) rocket-powered airplane was flown in the United States by Charles Yeager.
- 1952 First scheduled airline flights by jet transports begun by Great Britain.
- 1955 First jet-engined convertiplane that takes off and lands straight up and down was tested in the United States.
- 1957 High-energy fuels that increase jet ranges almost 50 per cent were put into commercial production.
- 1958 First commercial jet passenger service between New York and London.
- 1960 Turbofan engines using fans for added thrust in place of afterburners came into commercial use.



The First Jet Engine was invented by the Egyptian Hero 2,000 years ago. Hero's engine, called an *aeolipile*, runs by steam. When the water boils inside the closed kettle, the steam rises through pipes into a ball. Jets of steam shoot from the bent tubes, causing the ball to spin around rapidly.



A Modern Turbojet Engine consists of three main parts: a compressor, a combustion chamber, and a turbine. Fuel and compressed air burn in the combustion chamber. The reaction force caused by the expanding gases leaving the tail pipe drives the airplane forward.

General Electric

his class assignments a paper discussing the possibilities of jet propulsion for aircraft. Whittle patented a design for a jet-aircraft engine in 1930.

In the early 1930's, engineers in the United States and several European countries worked to develop a practical jet engine. Whittle had tested some of his designs by 1938. In the Paris aircraft exhibition of that year, the French engineer René Leduc displayed a model of an airplane powered with a ramjet.

Jets Put to Use. The Heinkel Company in Germany built and flew the first air-breathing jet-propelled airplane in 1939. In Italy, the jet-propelled aircraft Caproni-Campini CC2 was built and flown in 1940 under the direction of S. Campini. These first two jet airplanes to fly did not have very successful engines.

The first flight of an airplane using a turbojet of practical design was in Great Britain in 1941. A Whittle engine was installed in a Gloster E28/39 airplane and was flown by Flight Lt. P. E. G. Sayer.

The first jet airplane flown in the United States was built by Bell Aircraft Corporation. Its two turbojets, built by the General Electric Corporation, followed Whittle's design. This airplane, known as the XP-59A, was test flown in 1942 by Robert Stanley. During 1942, also, the German Junkers Jumo-004 jet engine was installed in a Messerschmitt Me-262 and flown. This was the first successful jet-propelled combat airplane. In 1944 jet airplanes began to be used by German fighter squadrons. Germany also took the lead in the use of jet propulsion in guided missiles during World War II. See **GUIDED MISSILE**.

Postwar Development. In 1947 the rocket-powered Bell X-1, built in the United States, became the first airplane to fly faster than the speed of sound. This plane was launched from a bombing plane in the air and piloted by Charles Yeager. In France in 1949, the engineer René Leduc designed a ramjet airplane. It was launched from the back of a transport airplane.

Douglas Aircraft Company built an experimental airplane in the United States, using both a turbojet

engine and a rocket engine. This D-558-2 skyrocket was flown higher than fifteen miles and at almost twice the speed of sound, by William Bridgeman in 1951. In 1953, this plane was flown to a new altitude record of nearly sixteen miles by Marion E. Carl.

Great Britain and Canada have led in the development of jet passenger transports. The British Overseas Airways began scheduled jet air liner flights in 1952, between London and Johannesburg, South Africa. In 1955, jet-engined convertiplanes that take off and land straight up and down were tested in the United States. Gas-turbine engines using the jet principle were tested in automobiles in the 1950's. Pulsejets and ramjets have been used on helicopters.

H. SHELDON STILLWELL

Related Articles in **WORLD BOOK** include:

Aerodynamics	Guided Missile
(Supersonic Flight)	Petroleum (Jet Fuel)
Air Force	Rocket
Aviation	Space Travel
Goddard, Robert H.	Whittle, Sir Frank
	Yeager, Charles

Outline

- I. How Jet Propulsion Works**
 - A. The Principle
 - B. How Jet Engines Produce Power
 - C. Thrust
- II. Types of Jet Engines**
 - A. Turbojet
 - B. Turbojet with After-Burner
 - C. Turboprop
 - D. Pulsejet
 - E. Ramjet
 - F. Rockets
- III. Development of Jet Propulsion**
 - A. Jet Pioneers
 - B. Jets Put to Use
 - C. Postwar Development

Questions

Why are jet engines called reaction-type engines?
 What is thrust?
 How does thrust in a jet engine differ from thrust in a propeller-and-piston engine?
 What are the advantages of jets in comparison to piston engines?
 What is a turboprop or propjet? A ramjet?

JET STREAM

JET STREAM is a narrow current of fast-flowing air. It follows an irregular, wavy path around both the Northern and Southern Hemispheres, in an easterly direction. The jet stream acts much like an ocean current, such as the Gulf Stream. It does not always flow in the same place or with the same speed and direction. The jet stream reaches its maximum speed at elevations of 30,000 to 40,000 feet. It usually blows from about 100 to 120 miles an hour, but sometimes reaches a speed of almost 300 miles an hour. Meteorologists believe that it may reach up to 350 miles an hour. It is not possible to determine the exact position of the jet stream, because it meanders vertically as well as horizontally. However, scientists do know that it is lower, faster, and closer to the equator in the winter than it is in the summer.

The jet stream was not known until World War II, when American bombers flew at high altitudes to bomb Japanese targets. Pilots sometimes noticed that their planes stood practically still because of certain head winds. At other times, when the planes flew downwind, the speed almost doubled. Using advanced equipment, meteorologists were later able to verify the existence of the jet stream.

Knowledge of the position and speed of the jet stream is important to pilots, who use it to cut travel time. The jet stream is also important in weather forecasting, because certain types of storms occur most often just beneath it.

VANCE E. MOYER

JETSAM. See **FLOTSAM**, **JETSAM**, AND **LAGAN**.

JETTY, JET *ih*, is a pier or wall built into a river or harbor. It may be made of timber and stone, or of stone alone. A jetty is used as a breakwater, to break the force of rough waves, or to deepen the channel by increasing the current. Many harbors have great walls or banks built out into the sea for added protection. Among such protected harbors are those of Dunkerque and Calais in France. Jettylike structures called *groins*, which are made of asphalt and sand, protect some stretches of the United States East Coast from wave erosion.

The Columbia River on the Pacific Coast of the United States has one of the longest jetties in the world. It is nearly $4\frac{1}{2}$ miles long. Before it was built, ships sometimes went aground in the harbor because of shifting sandbars. Now the harbor has a single channel 29 feet deep.

The Mississippi River carries great quantities of fine sand and silt to the place where it empties into the Gulf of Mexico. It flows into the Gulf through four mouths, called *passes*. In 1874 these mouths were all so choked that large steamers could not get through. James B. Eads suggested building two long jetties along the banks and out into the Gulf. These walls would force the water through a narrower channel, making the current carry the sand and silt out to sea. The jetties in the South Pass were finished in 1875. Within two years the river had made a channel 30 feet deep. ALLAN T. GIFFORD

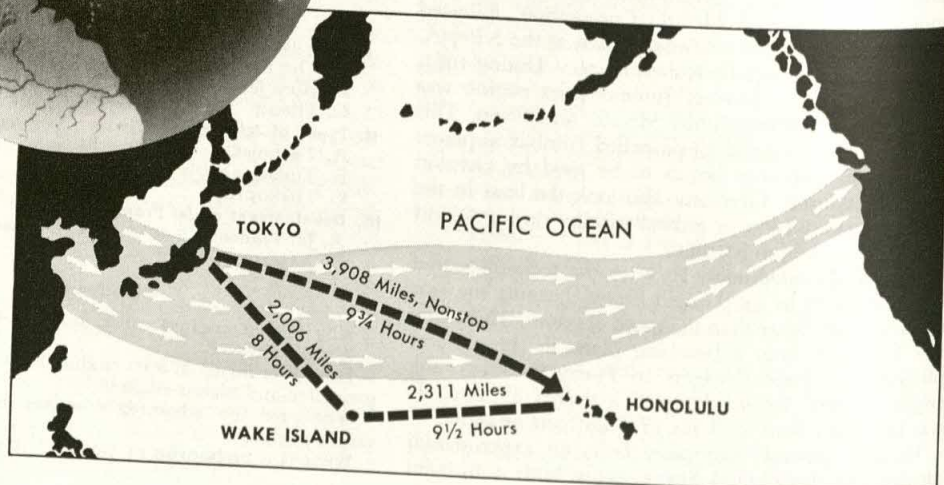
See also **BREAKWATER**; **LEVEE**; **MISSISSIPPI RIVER**.

JEW. See **JESUS CHRIST**; **JEWS**.

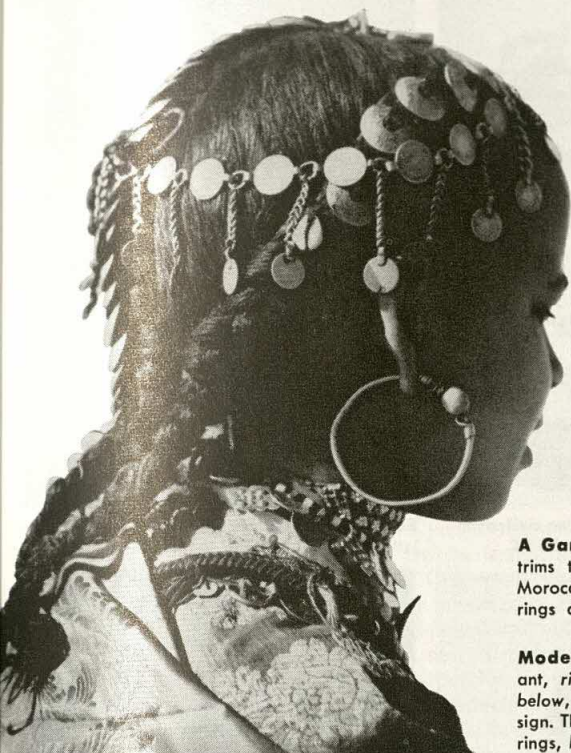


JET STREAM

The **Jet Stream** flows around the world at high altitudes from west to east, left. Eastbound airliners can sometimes "hitch a ride" on the stream and shorten the time of their flights. The map of the Pacific Ocean, below, shows how an airplane in the jet stream can cut its regular flight time nearly in half.



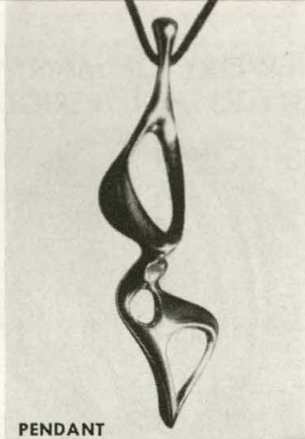
JEWELRY



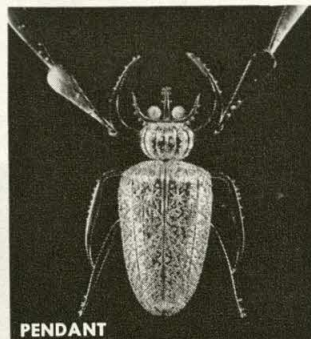
United Press Int.

A Garland of Silver Ornaments trims the braided hair of a young Moroccan girl, left. Giant hoop earrings dangle from her pierced ears.

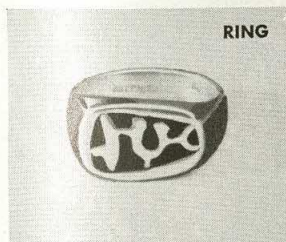
Modern Jewelry, such as the pendant, right above, and ring and pin, below, often follows a free-form design. The bug pendant, right, and earrings, below, are more traditional.



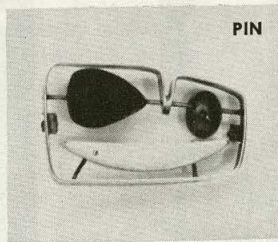
PENDANT



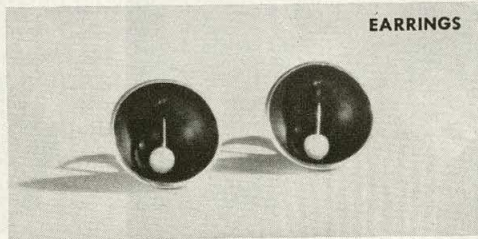
PENDANT



RING



PIN



EARRINGS

Craft Horizons

JEWEL is an ornament made of enamel or precious metals or stones, either alone or in combination. It is generally used for personal wear, but may also adorn items of state, as in some of the *crown jewels*. *Jewel* also refers to the pivot bearing in a watch. See also BEARING; CROWN; GEM; JEWELRY.

JEWEL CAVE NATIONAL MONUMENT, in western South Dakota, contains a limestone cavern of great beauty. The limits of the cave are as yet unknown. The 1,274.56-acre monument was established in 1908.

JEWELRY, *JOO ul rih*, refers to the ornaments people wear as personal adornment or as symbols of wealth and status. It includes rings, bracelets, necklaces, earrings, brooches, and various ornaments for the hair. Some people believe that certain kinds of jewelry possess magical powers. Almost any kind of material can be used to make jewelry. Primitive peoples use pieces of bone, wood, or iron to put in the ear, lip, or nose. They also make bracelets and necklaces from strings of teeth, pebbles, seeds, or shells. Men began to use gold and silver for jewelry soon after they discovered these metals. Gold is still the chief metal used for jewelry, because of its attractive color and the ease with which it can be shaped or worked. Precious stones, or gems, are widely

used in very expensive present-day jewelry (see GEM).

In Ancient Times, people used fairly simple tools and the skill of their own hands to produce jewelry of great beauty. Religious motifs were especially common. Jewelry formed an important part of the costume in ancient Egypt. Egyptian jewelers used many different techniques, including chiseling, molding, inlay, and granulated work. The Assyrian and Babylonian civilizations also produced a wide variety of jewelry.

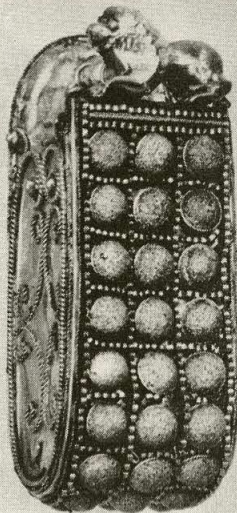
Jewelry in ancient Greece had remarkably delicate designs, often based on animal and human figures. The Greeks used metal for most of their jewelry, and were skilled in working gold. They rarely used gems before the 200's B.C. The Etruscans of Italy developed the art of metalwork to a high degree. Some of their work reached such refinement that later craftsmen tried to imitate their methods. They were unsuccessful until goldworkers were discovered who had inherited the technique from Etruscan ancestors. See ETRUSCAN (picture, Etruscan Jewelry).

Roman jewelry was more splendid and heavy than Greek jewelry. The Romans also used more gems. They valued expensive materials more than delicate and skillful workmanship. Finger rings were very popular during

JEWELRY OF MANY STYLES AND PERIODS



Spiral Bracelets of gold-plated bronze were made and worn in Italy in about 600 B.C.



Gold Earring of the Etruscan civilization in Italy was made in about 450 B.C.



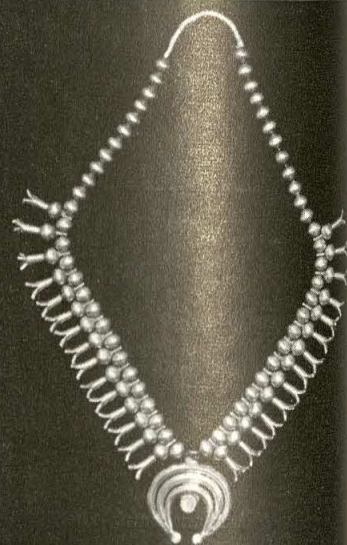
Silver Earrings are worn by Bolivian Indian women. This one is 11 inches long.



An Arab Comb. Ornamental bands of gold and silver give the design a sharp contrast.



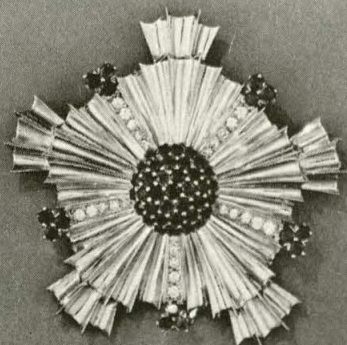
British Somaliland Necklace is made of beads and richly designed pendants.



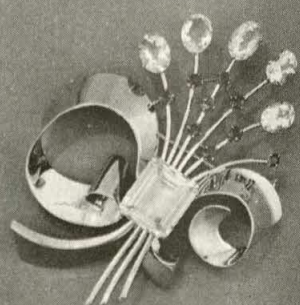
Navaho Indian Necklace is the work of skilled craftsmen. It is made of silver.



A Golden Crown bedecked with jewels is worn by a Norwegian girl on her wedding day.



Modern American Brooch is made of sapphires and aquamarines set in gold.



Clip-on Brooch. Sapphires and diamonds sparkle from an expensive gold setting.

Metropolitan Museum of Art; Traphagen School of Fashion; Tiffany & Co.

the days of the Roman Empire. Men and women often wore rings on every finger and sometimes two rings on one finger.

In Central and South America, the Indians made excellent jewelry. A large quantity of gold jewelry has been found in tombs at Monte Alban, near Oaxaca, Mexico.

During the Renaissance, jewelry designs became quite elaborate, and were richly decorated with enamel, gems, and pearls. Precious or semiprecious stones were set flat with a backing of metal. In the 1500's a better method of cutting diamonds led to lighter and more graceful settings. This method of cutting produced diamonds somewhat in the shape of a rose, called *rose diamonds*. During this period, earrings were considered an important item of a gentleman's costume. Elaborate chains and collars were worn by the wealthy and distinguished.

In Recent Times, the art of jewelry making changed from handmade and individual creation to large-scale mass production. Certain expensive pieces of jewelry still require handwork, but most jewelry is machine made. London, Paris, and New York City are the chief centers of jewelry manufacture. The modern jewelry industry uses a large amount of gold-plated and gold-filled work. It also uses cheaper metal alloys and glass or paste imitations of gems. Certain inexpensive types of ornaments, often called *costume jewelry*, are made of such materials as wood, plastics, leather, cork, and glass. Costume jewelry is very popular because its low price allows for more variety in jewelry styles. Although styles in jewelry change, a fine piece of jewelry is always in good taste if it suits the occasion. WILLIAM M. MILLIKEN

Related Articles. See the GEM article for a list of the stones and minerals used in jewelry that have separate articles in WORLD BOOK. See also the following articles:

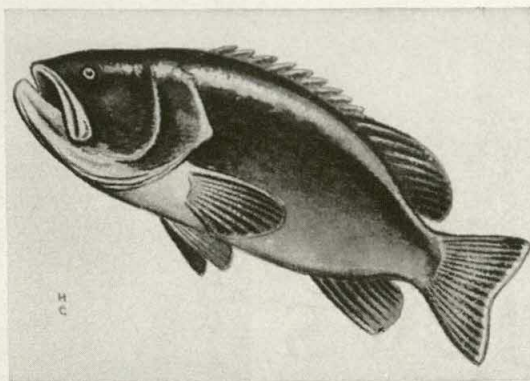
Bead	Gold (Uses of Gold)	Platinum
Brooch	Goldsmithing	Ring
Carat	Indian, American	Silver
Earring	(color picture)	Watch
Enamel	Ivory	

JEWELS OF THE MADONNA. See OPERA (Some of the Famous Operas).

JEWETT, SARAH ORNE (1849-1909), was an American novelist and writer of short stories and sketches. She became known especially for her vivid and precise descriptions of the life and customs of New England during the 1800's. Her masterpiece is *The Country of the Pointed Firs* (1896), a number of sketches about the Maine seacoast and the history of its people. Other well-known works include the novels *A Country Doctor* (1884) and *A Marsh Island* (1885), and the collections of short stories and sketches *Deephaven* (1877) and *A Native of Winby* (1893). Miss Jewett was born in South Berwick, Maine. The first story Miss Jewett had published appeared in the *Atlantic Monthly* when she was 19 years old. FREDERICK J. HOFFMAN

JEWFISH is the name of several large fish, also called *groupers*, which are the southern relatives of the sea bass family. The *spotted jewfish* is between 2 and 6 feet long. It lives along the coasts of Florida and from the West Indies to Brazil. It has a huge mouth and strong teeth, and feeds greedily on smaller fish.

The *black jewfish* sometimes weighs as much as 500 pounds. It lives between Charleston, S.C., and Brazil. Its color varies from chocolate-brown to blackish-gray.



Black Jewfish Live in Warmer Parts of the Atlantic.

Its great strength and courage make it a good game fish.

The *California jewfish* lives in the Pacific Ocean, from the coast of Southern California north to southeastern Alaska. It, too, delights sportsmen, and it is one of the favorite game fish of Catalina Island. This fish is brownish-colored with greenish-black blotches. The largest California jewfish are 6 feet long.

Scientific Classification. Jewfish are in the family *Epinephelidae*. The spotted jewfish is genus *Promicrops*, species *itaiaara*. The black jewfish is *Garrupa nigrita*. The California jewfish is *Stereolepis gigas*. LEONARD P. SCHULTZ

JEWISH CALENDAR. See CALENDAR (The Hebrew Calendar).

JEWISH FEASTS. See JUDAISM.

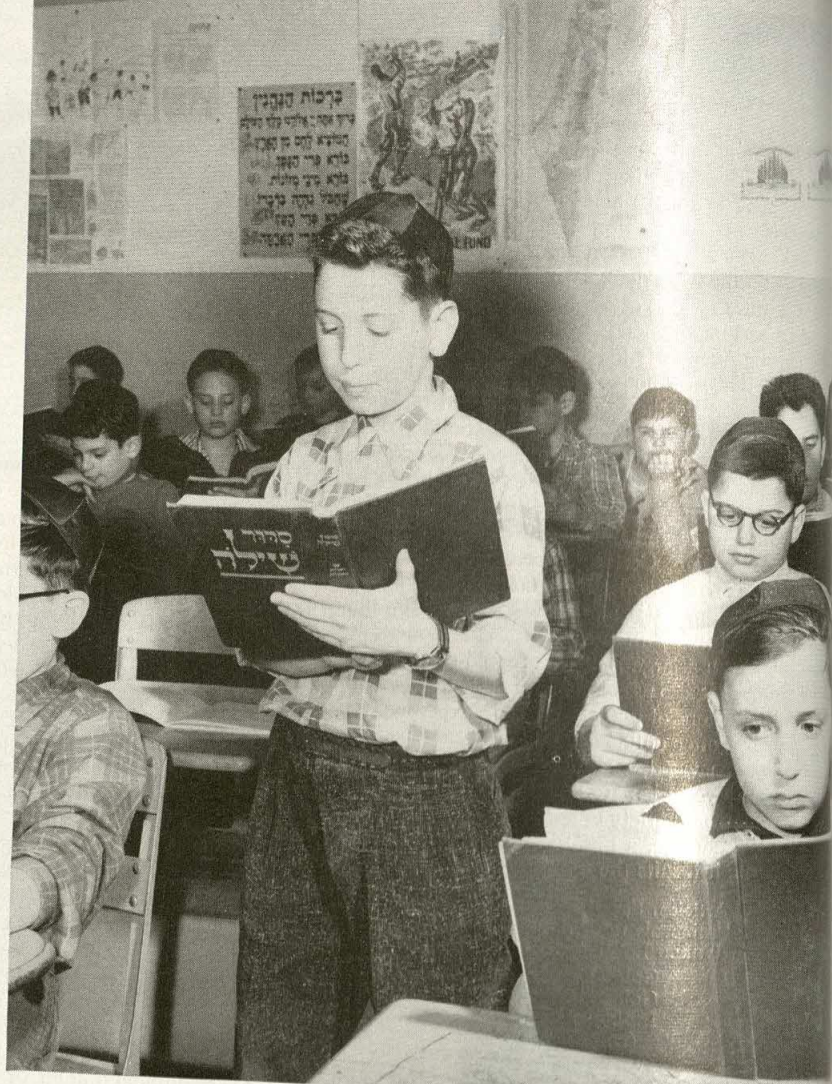
JEWISH LITERATURE. See HEBREW LANGUAGE AND LITERATURE; YIDDISH LANGUAGE AND LITERATURE.

JEWISH THEOLOGICAL SEMINARY OF AMERICA, in New York City, trains Conservative rabbis. It includes a Cantors Institute and Rabbinical school, for men only, and several coeducational divisions. Its library has the largest collection of Judaica in the world. The seminary was the first rabbinical school to formalize the traditional training of Jewish teachers and rabbis in the western academic pattern. It was founded in 1887 and reorganized in 1902. For enrollment, see UNIVERSITIES (table). JESSICA FEINGOLD

JEWISH WELFARE BOARD, NATIONAL, is an organization that sponsors many welfare and educational services for American Jews. It is authorized by the United States Government to provide for the religious needs, welfare, and morale of Jewish personnel in the armed forces and in Veterans Administration hospitals. Its Commission on Jewish Chaplaincy endorses all Jewish chaplains. More than 350 Jewish community centers in the United States are affiliated with it. The National Jewish Welfare Board was founded in 1917. It publishes the magazine *Circle*. It has headquarters at 145 E. 32nd St., New York, N.Y. BERNARD POSTAL

JEWISH WOMEN, NATIONAL COUNCIL OF, is an organization made up of Jewish women in the United States. The group promotes health, recreation, and social welfare in local communities. It also works for better understanding of national and international affairs. A number of its local groups sponsor services for the foreign-born. The group was founded in 1893, and has about 110,000 members. Headquarters are at 1 W. 47th St., New York 36, N.Y. HANNAH STEIN

J E W S



Congregation B'nai Zion, Chicago

JEW S are members of a group held together for more than 3,000 years by a common faith and a common history. Many persons believe that Jews form a nation. Others claim that they make up a religious group only. But there is no single definition of a Jew on which all Jews agree. A person born of a Jewish mother is a Jew. Even if he does not practice *Judaism*, the religion of the Jews, he remains a Jew. But if he voluntarily gives up his religion to join another religious group, he ceases to be a Jew. If a man is converted to Judaism, he becomes a Jew by religion. His children will be considered Jews by birth if he marries a Jew. If a woman is converted to Judaism, her children will be considered Jews by birth.

About 12,000,000 Jews live in the world today—some 5,000,000 in the United States, 3,000,000 in Russia, about 1,700,000 in Israel, and about 200,000 in Canada. The rest are scattered in European countries and other lands.

The Jews have had an impact on civilization far beyond the size of their group. Both as a people and as individuals, they have contributed much to man's ideas and culture. The Old Testament was written by Jews. People throughout the world have accepted its teach-

ings as guides to ethical living. Almost 3,000 years ago, Jewish prophets spoke of universal peace and brotherhood. Jewish ideas of human dignity helped pave the way for democracy. The Jewish emphasis on charity as a duty helped shape the growth of modern philanthropic organizations.

Christianity is sometimes called "the daughter of Judaism." Jesus was born a Jew. So were the twelve disciples and many early Christians. The Hebrew Bible, or Old Testament, became the foundation of the Christian religion. Islam is also based on Judaism. Mohammed accepted the Hebrew patriarchs, the prophets, the Hebrew Bible, and *monotheism* (the belief in One God) as part of his religion.

For the beliefs and practices of the Jewish religion, see **JUDAISM**.

Beginnings of Jewish History

The Hebrew Bible tells of the origins and early history of the Jews. Abraham, the father of the Jewish people, was one of the first men to worship One God. The Bible calls him *Abraham the Hebrew*. Therefore, his descendants are sometimes called *Hebrews* instead of

Learning the Traditions, students read from the prayer-book in a modern Hebrew school. Specially trained educators teach Hebrew subjects.

Traditional Learning begins at an early age for members of the pious sect of *Hasidim*. Children learn by chanting verses after the teacher.



Cornell Capa, Magnum

Jews. Abraham, his son Isaac, and his grandson Jacob are known as the Hebrew *patriarchs*, or fathers. Archaeologists believe that they lived about 1900 B.C. Jacob, who was also called Israel, had 12 sons. They were Reuben, Simeon, Levi, Judah, Zebulun, Issachar, Dan, Gad, Asher, Naphtali, Joseph, and Benjamin. The Twelve Tribes that later made up the Jewish people all descended from Israel's sons. That is why the Jews are sometimes called the *Children of Israel*, or *Israelites*.

Abraham left his home in northern Mesopotamia and traveled to Canaan, the area later called Palestine. He and his descendants lived there for many years. Later, many Israelites journeyed to Egypt. The Bible tells that Jacob's sons sold their brother Joseph into slavery in Egypt. The Egyptian *pharaoh*, or king, favored Joseph and made him prime minister. When a famine struck Canaan, Joseph forgave his brothers and brought them and his father to Egypt.

For many years the Israelites prospered and lived well in Egypt. But later a king "who knew not Joseph" (Ex. 1: 8) made slaves of the Israelites and forced them to build large cities and palaces. Scholars believe that Joseph and his family lived in Egypt when Asiatic con-

querors called *Hyksos* ruled the land (see HYKSOS). Egyptian rulers later regained control. The Israelites may have become slaves during the reign of Seti I (1308-1290 B.C.), and may have built large cities for his son Ramses II (1290-1224 B.C.).

Moses, the great leader and teacher of the Israelites, led them out of Egypt in the 1200's B.C. This movement is called *the exodus*. The Israelites wandered in the wilderness between Egypt and Canaan for 40 years. They received the Ten Commandments at Mount Sinai during this period. Moses died alone on Mount Pisgah, and his tomb remained unknown so that his followers would not try to worship him.

Before Moses died, he chose Joshua to succeed him, saying "Be strong and of good courage." Joshua led the Twelve Tribes into the land of their fathers. The Israelites probably became established in Canaan by about 1200 B.C. But the Canaanites, Philistines, and Aramaeans fought them for many years. Other attacks came from the neighboring kingdoms of Edom, Moab, and Ammon. The Israelites fought repeated wars with these peoples, who still worshiped idols. At the same time, they developed their own belief in One God.

At first, men and women called Judges led the Israelites. Some of the more important Judges included Gideon, Deborah, and Samson. But, to meet the dangers that threatened them, the Twelve Tribes united to form a kingdom. The great prophet Samuel warned the people against forming a monarchy, but finally gave in to their wishes and chose Saul as king. The people honored Saul for his bravery, but found that he lacked wisdom and steadiness. In time, they turned from Saul to the young David, a shepherd, who had killed the giant Philistine warrior Goliath. When Saul died in battle, David became king. David was a poet as well as a warrior and statesman. His Book of Psalms contains some of the most beautiful writings in the Bible. David's son, Solomon, followed him as king. Soon after Solomon became king, he built the first Temple in Jerusalem for the worship of God.

Israel and Judah

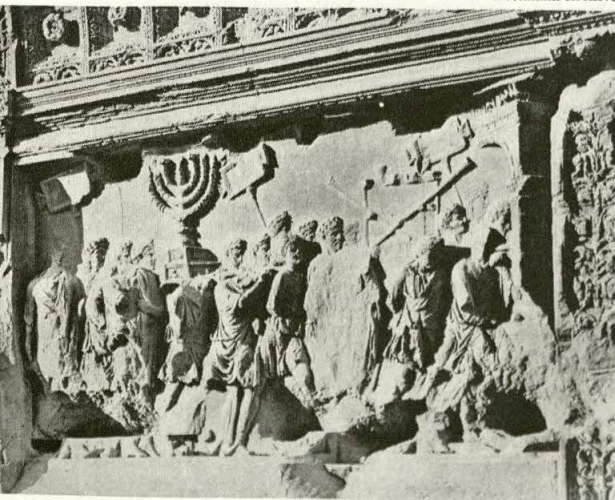
When Solomon died, political and economic troubles split the kingdom. His son Rehoboam increased the heavy taxes and ten of the tribes broke away and set up an independent nation in the north. They chose Jeroboam as king, and called themselves the kingdom of Israel. The two remaining tribes, Benjamin and Judah, formed the kingdom of Judah in the south. The citizens of this kingdom were called *Judeans*. The word *Jew* comes from this name.

Many great prophets, including Isaiah, Jeremiah, Amos, and Hosea, preached to the nation. With fearless honesty, they reproached the people and rulers for their sins. The prophets taught that God was the God of all mankind, and not just the God of the Jews.

Assyria destroyed Israel in 721 B.C. Its people were deported and gradually became part of the surrounding nations. Jews speak of these Israelites as *the ten lost tribes*. The Babylonians conquered Judah in 586 B.C. and destroyed the Temple in Jerusalem. They took some Jews as captives, but left many in Judah. Unlike the scattered ten tribes, the Judeans continued to practice

The Spoils of the Second Temple are shown on the Arch of Titus in Rome. The Romans destroyed the Temple in A.D. 70.

Bettmann Archive



their religious teachings even as captives in Babylon.

Rebuilding the Temple

The Jews spent many years as captives in Babylon. The prophet Ezekiel encouraged them to believe that someday they would return to their homeland. In 538 B.C., Cyrus, the Persian Emperor, allowed the Jews to return to Jerusalem and to rebuild their Temple. Scholars are not sure whether the return took place as a single movement or over many years. Some Jews did not return to Judea. Instead, they remained in their homes in Babylon. But the Jews who returned, and those who had been left in Judea, built a new Temple in Jerusalem which they completed in 516 B.C. Later, the Jews were led by Ezra and Nehemiah, and the *Men of the Great Assembly*, a legislative body.

Alexander the Great conquered Judea in 334 B.C. One of his successors, Ptolemy of Egypt, allowed the Jews to practice their religion and to conduct their own affairs. The Bible was translated into Greek during this period. This translation is called the *Septuagint* (see SEPTUAGINT). The Seleucid kings of Syria later ruled Judea. At first they followed the same policy. But in 168 B.C., Antiochus Epiphanes tried to force the Jews to give up their religion. After a heroic struggle, a small group led by Judas Maccabaeus defeated the Syrians in 165 B.C. The Jews later set up their own kingdom of Judea under the Hasmoneans, Judas' family. Their rule lasted about a hundred years (see MACCABEES).

Two rival religious groups became active in Jewish life during this period. The *Pharisees* felt that religion must grow and be interpreted. They made new laws and rules for daily living based on the Bible. These laws became a part of the *Oral Law* which the Pharisees considered as binding as the written law in the Bible. The *Sadducees* bitterly disagreed with the Pharisees, and

RED-LETTER DATES IN JEWISH HISTORY

- c. 1225-1020 B.C. Judges led the Israelites.
- c. 1020-1004 B.C. Saul reigned as the first king of Israel.
- c. 1004-965 B.C. David and then Solomon ruled over a united kingdom.
- c. 926-586 B.C. The land was divided into the kingdoms of Judah and Israel.
- 721 B.C. The Assyrians destroyed the kingdom of Israel.
- 586 B.C. The Babylonians captured the kingdom of Judah and destroyed the Temple in Jerusalem.
- 538 B.C. King Cyrus of Persia allowed the Jews to return to Jerusalem.
- 516 B.C. Jews completed the Second Temple in Jerusalem.
- 165 B.C. Jewish forces under Judas Maccabaeus defeated the Syrians and rededicated the Temple.
- A.D. 70 The Romans captured Jerusalem and destroyed the Second Temple.
- c. 200 Rabbi Judah Hanasi of Palestine finished codifying the Mishnah.
- c. 500 Babylonian scholars completed the Talmud.
- c. 1000-1300 Jews enjoyed a Golden Age of learning in Spain.
- 1492 Ferdinand and Isabella expelled all Jews from Spain.
- 1654 The first Jewish settlers landed in New Amsterdam.
- 1763 Jews of Newport, R.I., built the earliest synagogue still standing in America.
- 1897 Theodor Herzl founded the Zionist movement.
- 1933-1945 The Nazis slaughtered more than 6,000,000 Jews.
- 1948 The United Nations established the State of Israel.



Frank J. Darmstaedter, the Jewish Museum, N.Y.

The Horah is one of the most popular folk dances in Israel. Many Israeli songs and dances are known throughout the world.

accepted only the written law. They refused to recognize the Oral Law as binding upon them.

The *Essenes*, a devout religious sect, were probably active during this period, and existed until about A.D. 70. In 1947, scholars found manuscripts and religious works in caves near the Dead Sea that may have been buried by the Essenes. These *Dead Sea Scrolls* include what some scholars believe to be the earliest known manuscripts of parts of the Bible, as well as some *Apocryphal*, or non-Biblical writings (see *DEAD SEA SCROLLS*).

The Destruction of Jerusalem

Internal quarrels weakened the Jews. In 63 B.C., Pompey captured Jerusalem, and the Jews had to accept Roman rule. But they resented the Roman government. During this period, the Romans crucified Jesus because they said Jesus claimed to be king of the Jews. The Jews finally revolted in A.D. 66, but the Romans defeated them. The Romans captured Jerusalem in A.D. 70 and destroyed the Temple. From then until the State of Israel was established in 1948, the Jews had no independent state.

Long before the Romans destroyed the Temple, many Jews had left Palestine to settle in other lands. More than a million Jews lived in Egypt, and others lived as far away as Greece and Rome. After the Romans destroyed their homeland, the Jews moved to all parts of the Roman Empire. Later, many of them moved into France and Germany, then to England, central Europe, Poland, and Russia. They spoke of themselves as living in the *diaspora* (which means *dispersal*), or exile.

Even after the fall of Jerusalem, the Jews remained loyal to their religion. Those who stayed in Palestine founded schools called *Yeshivot* to study the teachings of Judaism. About A.D. 200, Rabbi Judah Hanasi (Judah the Prince) completed the *Mishnah*, the first compilation of Jewish law and tradition.

Schools for the study of Jewish law and tradition also grew up in Babylonia. The heads of these schools, called *amoraim*, led the Jewish community in Babylonia. Their influence gradually spread to Jewish communities throughout the world. About 500, they finished compiling the *Gemara*, which with the *Mishnah* makes up the *Talmud* (see *TALMUD*).

In the 800's, a sect similar to the earlier Sadducees split off from the main body of Judaism. Members of this sect, called *Karaites*, did not accept the *Talmud*. They considered the Hebrew Bible their only authority

and believed that it must be obeyed literally. They set up their own synagogues and schools.

Persecutions of the Jews

The Jews in Europe suffered hundreds of years of persecution and discrimination. When Christians became dominant in Europe, intolerant leaders persecuted the Jews for rejecting Christianity. The Jews were driven from land to land. In many countries, they had to live in special areas called *ghettos* (see *GHETTO*). In other lands, laws kept them from owning land, becoming farmers, joining labor guilds, or entering professions. As a result, many Jews could earn a living only by lending money. This occupation also caused unfriendly relationships. Church laws prevented Christians from lending money at interest, but these laws, of course, did not apply to Jews. Merchants and kings often depended on Jewish moneylenders for cash to conduct their businesses. But many Christians misunderstood this, and mocked the Jews for lending money.

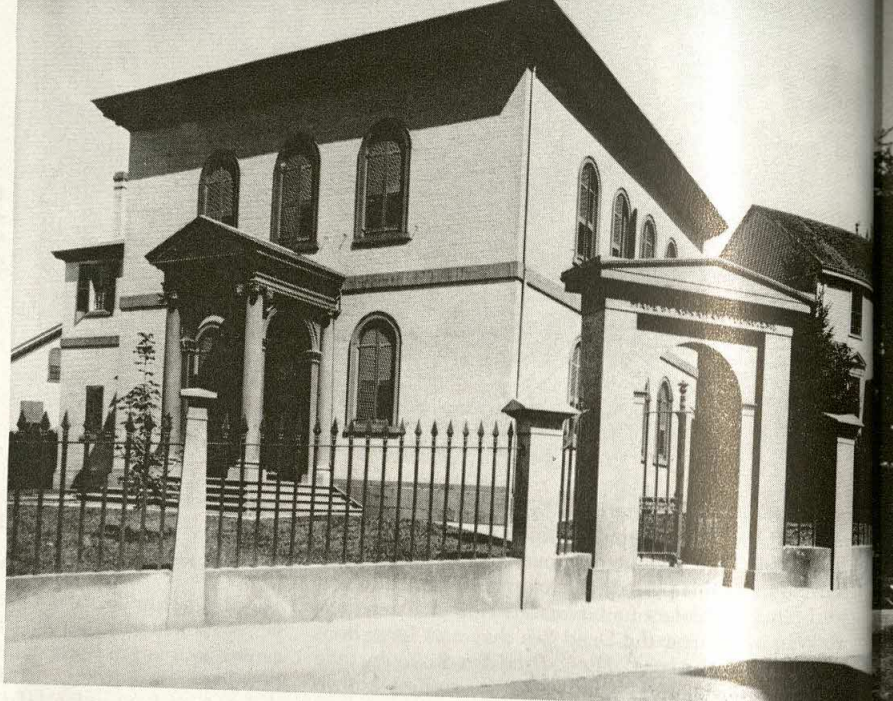
Faith in God gave the Jews courage to overcome their sufferings. In France, Germany, and other countries, great rabbis wrote important books. One outstanding scholar, Rabbi Solomon ben Isaac, usually called *Rashi*, lived in France during the 1000's. Scholars consider his commentary on the Bible and the *Talmud* so clear that they still use it today.

In Spain, which the Moors ruled from the 700's to the early 1400's, many Jewish philosophers, poets, and scholars produced important literary works. The period from about 1000 to 1300 is known as the *Golden Age of Spain*. The best-known Jewish scholars included two poet-philosophers, Solomon ibn-Gabirol and Judah Halevi; and Moses Maimonides, a philosopher, rabbi, and physician. Maimonides wrote a great philosophic work called *Guide to the Perplexed* and a book of codes called *Mishneh Torah* (*Second Law*).

During the late 1400's, leaders of the Inquisition began persecuting Jews and other nonconformists in Spain (see *INQUISITION*). In 1492, Ferdinand and Isabella expelled all Jews from the country. A number of Jews became Christians in order to remain in their homes. These converts were called *maranos*. Many of them continued to practice Judaism secretly. But most Jews moved to other parts of the world. Many found a haven in The Netherlands.

In Central Europe, Jewish centers grew up in Poland, Prussia, and Lithuania. The Jews in Poland built a

The Oldest Synagogue in the United States now stands as a national historic site in Newport, R.I. Peter Harrison designed the Touro Synagogue. It was dedicated in 1763.



Photow, Three Lions

strong religious and cultural community. But they suffered severe persecutions during the 1600's. In the 1700's, Israel Baal Shem-Tob founded a movement called *Hasidism*. It stressed the importance of exaltation and joy in the worship of God, even in times of trouble (see *HASIDISM*). Rabbi Elijah Gaon of Vilna was another great leader of this period.

After hundreds of years of suffering in Europe, the Jews began to enjoy happier lives. The turning point came in the late 1700's, when the American and French revolutions made people more aware of the rights of liberty and equality that belong to all men. It took a long time for the Jews to gain freedom. One of the great Jewish leaders in this battle for freedom was the philosopher Moses Mendelssohn.

By the mid-1800's, many countries had recognized the Jews as free and equal citizens. The new freedom brought a rebirth of Hebrew learning and literature in a movement called *Haskalah*, or enlightenment. Jews also began to make valuable contributions to the cultures of the countries in which they lived. But, in Poland and Russia, the Jews continued to suffer *pogroms*, or mass persecutions, until the 1900's.

Nazi Persecutions. During the 1930's, Adolf Hitler and the Nazi party in Germany made *anti-Semitism*, or hatred of the Jews, an important part of their program. Hitler blamed the Jews for Germany's many problems in the years after World War I. He repeated his falsehoods so often that the German people believed them. Before World War II ended in 1945, the Germans had slaughtered more than 6,000,000 men, women, and children of the 10,000,000 Jews in Europe. They also destroyed most of the synagogues in the countries they occupied or dominated.

Jews in America

A number of Jews sailed with Christopher Columbus on his first voyage. Accounts of the voyage say that Luis de Torres, a Jew, was the first member of the

expedition to set foot on American soil. During the 1500's, many Jews settled in the new colonies in the West Indies and South America.

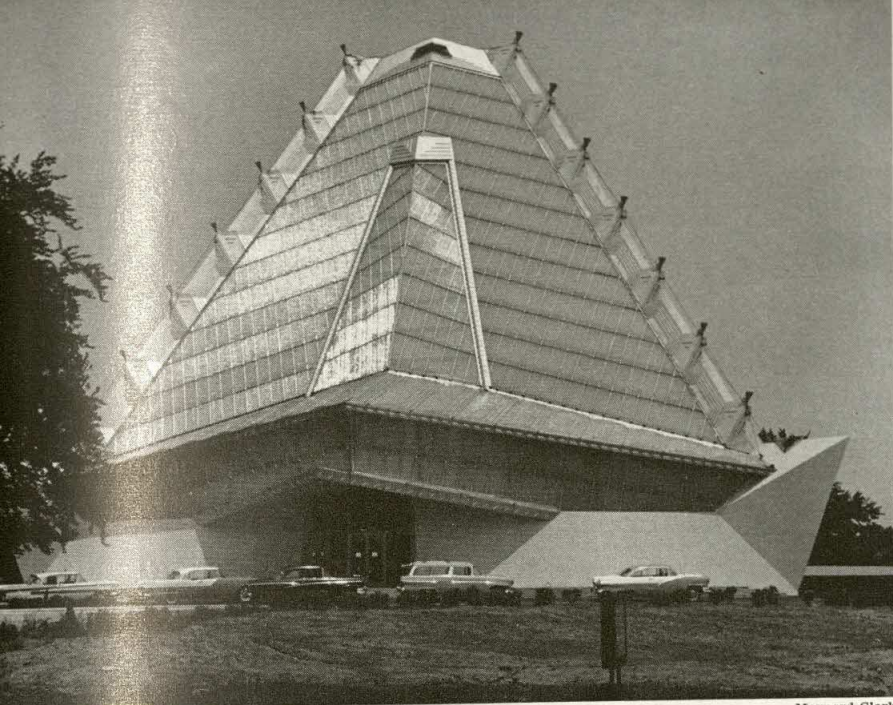
In 1654, a group of 23 Jews landed at New Amsterdam (now New York City) in spite of the objections of the governor, Peter Stuyvesant. They had appealed to the directors of the Dutch West India Company, and agreed to "take care of their own people" before the company would allow them to settle. Stuyvesant announced that Jews must pay taxes instead of performing military service. A Jew named Asser Levi insisted on his rights to stand guard with the others. Once again, the Dutch West India Company ruled against the governor. This struggle was one of the first successful fights for equal rights of a minority group in what is now the United States.

Jews founded a second community at Newport, R.I., in 1658. The synagogue at Newport, dedicated in 1763, still stands and is a national historic site.

Jews have played an active part in American history. Eighteen Jewish men who served in the Revolutionary War are buried in New York City's oldest Jewish cemetery. Haym Salomon, a wealthy Jew, gave his entire fortune to aid the struggling colonial army. During the Civil War, Judah P. Benjamin served as secretary of state of the Confederacy.

Jews built the men's and women's clothing industries and helped lead the American labor movement. They have also played an important role in trade and commerce and in the development of the motion-picture, radio, television, newspaper, and other industries. Jewish artists, musicians, and writers have achieved fame. Jews have been accepted as equals into American life. But, like other minorities, they sometimes meet prejudice and discrimination.

Most early Jewish settlers in America came from Spanish and Portuguese families. From 1815 to 1880, many Jews from Germany came to the United States to seek new opportunities. From 1881 to 1914, Jews fled



Maynard Clark

Today's Synagogues follow the latest architectural patterns. Frank Lloyd Wright designed the Beth Shalom Synagogue in Elkins Park, Pa. Its roof symbolizes Mount Sinai.

from pogroms in areas under Russian rule, and found refuge in the United States.

A Jewish State

Jews became loyal citizens of the countries that accepted them. But many Jews still felt the need for a Jewish homeland in the land of their forefathers. Some believed that the Jews were a nation, not just members of a religious group. Others argued that a Jewish homeland was the only way to end persecutions of Jews in other lands.

In 1897, Theodor Herzl, an Austrian writer, founded the Zionist movement. He wanted to create a Jewish state in Palestine (see ZIONISM). To escape new persecutions in Europe, many Jews emigrated to Palestine during the 1930's. Others who had been driven from their homes looked to Palestine as a place of refuge. By the end of World War II, about 600,000 Jews lived in Palestine.

In 1947, the United Nations voted to partition Palestine into separate Jewish and Arab states. The Jewish State of Israel was established on May 14, 1948. Leaders of the new state opened the doors to all Jews who wished to enter. Thousands of Jews emigrated to Israel from all parts of the world (see ISRAEL). But most Jews have remained in the lands they consider their homes, and have continued to contribute to the progress of their own countries.

PHILIP S. BERNSTEIN

Critically reviewed by SAMUEL BELKIN and LOUIS FINKELSTEIN

Related Articles in **WORLD BOOK** include:

BIOGRAPHIES

For a list of men and women in the Old Testament, see the **RELIGION** section of the **READING AND STUDY GUIDE**. See also:

Baal Shem-Tob	Herzl, Theodor	Maimonides
Ben-Gurion, David	Jacobs, Joseph	Salomon, Haym
Bialik, Chaim N.	Lazarus, Emma	Weizmann, Chaim
Geiger, Abraham	Maccabees	Zunz, Leopold
Halevi, Judah		

ORGANIZATIONS AND INSTITUTIONS

B'nai B'rith	Synagogue Council of America
Dropsie College	United Jewish Appeal
Hadassah	Women's American ORT
Jewish Theological Seminary of America	Yeshiva University
Jewish Welfare Board, National	Young Men's Hebrew Association
Jewish Women, National Council of	Young Women's Hebrew Association

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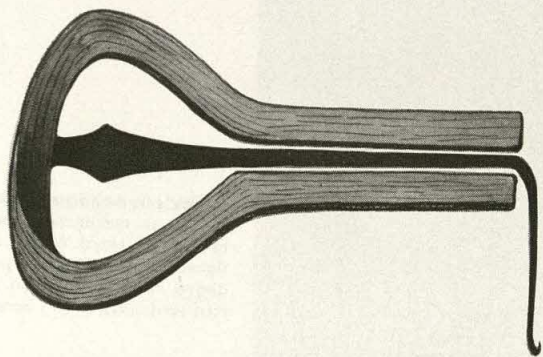
Calendar (Hebrew Calendar)	Ghetto	Palestine
Clothing (color picture)	Hasidism	Pharisee
Dancing (The Bible)	Hebrew Language and Literature	Sadducee
David, Star of	Israel	Sanhedrin
Dead Sea Scrolls	Jerusalem	Semite
	Judaism	Yiddish
	Judea	Language and Literature

Outline

- I. Beginnings of Jewish History
- II. Israel and Judah
- III. Rebuilding the Temple
- VI. The Destruction of Jerusalem
- V. Persecutions of the Jews
 - A. In Spain
 - B. In Central Europe
 - C. Nazi Persecutions
- VI. Jews in America
- VII. A Jewish State

Questions

How did the first Jews in America win equal rights?
 Who were the ten lost tribes?
 When were the first and second Temples destroyed?
 Who destroyed them?
 Why did the Pharisees and Sadducees disagree?
 Who were the Judges? The Prophets?
 What was the Golden Age of Spain?
 What were the achievements of (1) Judas Maccabaeus?
 (2) Rashi? (3) Moses Maimonides? (4) Theodor Herzl?
 How did the Jews influence Christianity? Islam?
 Who is known as the father of the Jewish people?
 What was the first Jewish community established in North America?



The Jew's-Harp Is Played Mainly for Personal Enjoyment.

JEW'S-HARP is a small musical instrument used mainly in folk music and by children. It consists of a flexible metallic reed at one end of a curved metal frame. The other end of the reed is tapered and bent forward at a right angle. The player holds the metal frame against his teeth and makes the reed vibrate by hitting its forked end with his free hand. He produces different notes by changing the size and shape of his mouth cavity.

The name has no relationship to Jews, but is probably a corrupt form of *Jaw's Harp*. Similar instruments have been found in various parts of the world, including Borneo, China, Japan, and Siberia. The Jew's-harp has been known in Europe since the 1300's. KARL GEIRINGER

JEYPORE. See JAIPUR.

JEZEBEL. See AHAB; JEHU.

JHELM RIVER. See KASHMIR.

JIBUTI. See DJIBOUTI.

JIDDAH. See ARABIA; HEJAZ.

JIGGER. See CHIGGER.

JIM CROW refers to practices, institutions, or laws that result from or support segregation of Negroes from whites. The term came into use in the 1880's and originally referred to a Negro character in an old song. In the 1820's, it was the name of a popular dance. *Jim Crow Laws* in certain southern states require the separation of races in such places as public conveyances, restaurants, schools, hotels, factories, and theaters. See also NEGRO (After Reconstruction).

JIMÉNEZ, *hee MAY nayth*, **JUAN RAMÓN** (1881-1958), a Spanish poet, won the 1956 Nobel prize for literature. His masterpiece, *Platero and I* (1917), is an account of life in the Spanish town of Moguer. The author tells the story while chatting with his donkey, Platero.

Juan Jiménez identified himself with nature and showed an awareness of God's eternal presence in his poetry. He was born in Moguer. Jiménez left Spain during the Spanish Civil War in 1936 and lived in different countries of North and South America until his death.

JIMÉNEZ DE QUESADA, *kay SAH thah*, **GONZALO** (1497?-1579), a Spanish lawyer, became an explorer and conqueror in South America. The Spanish commander of Santa Marta sent him to explore the Magdalena River in what is now Colombia. After great hardships, he reached the country of the half-civilized Chibcha Indians, and conquered them in 1538. He founded

HARVEY L. JOHNSON

Bogotá, the present capital of Colombia. He was born in Granada, Spain.

CHARLES E. NOWELL

JIMMU, or **JIMMU TENNO**. See JAPAN (Early Days).

JIMSON WEED, another name for stramonium, is a large, bushy plant with poisonous seeds. It grows throughout North America, and is common in the central United States.

The Jimson weed is an annual. It reaches a height of 5 feet, and has erect white or violet trumpet-shaped flowers about 4 inches long. The drug stramonium is made from the leaves and seeds. The name Jimson is a popular shortening of the name of the early Virginia settlement of Jamestown.

Scientific Classification. The Jimson weed belongs to the *Solanaceae* family. It is classified as genus *Datura*, species *stramonium*.

GEORGE H. M. LAWRENCE

See also DATURA; STRAMONIUM.

Jimson Weed has large leaves and trumpet-shaped flowers. Its poisonous seeds, which have a narcotic effect, are used in drugs. USDA



JINGO is a name for a person who takes a blustering, warlike attitude. The term originated in England in the 1870's. The government, headed by Benjamin Disraeli (Lord Beaconsfield), hesitated to interfere in a war between Russia and Turkey. The term *jingo* came from this stanza in a song sung in a London music hall:

We don't want to fight,
But, by jingo, if we do,
We've got the ships,
We've got the men,
We've got the money, too.

An attitude of militant superiority to people of other nations is often called *jingoism*. The same type of militant spirit was at one time described in the United States as *spread-eagleism*.

See also UNITED STATES, HISTORY OF (McKinley's Full Dinner Pail).

FREDERICK F. BLACHLY

JINN. See GENII.

Present-Day Jinrikishas used in Japan and other parts of the Orient have foot-powered bicycles to pull them, right. They are also called *pedicabs*. The Japanese word *jinrikisha* means *man-powered cart*.

Man-Pulled Jinrikishas, below, were once widely used as taxicabs in China and Japan. Some "ricksha" pullers could cover a mile in 10 minutes. Some of the carts had hoods to protect passengers.



Takayuki Ogawa, Fuji Service & Trading Co.



Burton Holmes, Ewing Galloway

JINNAH, *JIN nuh*, **MOHAMMED ALI** (1876-1948), was called "the great leader of Pakistan." He became permanent president of the Moslem League in 1934. He led the demand for an independent Moslem nation to be known as Pakistan (Land of the Pure). After Pakistan gained its independence in 1947, Jinnah carried the main burdens of government (see **PAKISTAN**). He supported Pakistan's case in the Kashmir dispute with India (see **KASHMIR** [History and Government]).

Jinnah was born in Karachi, India (now Pakistan). He came from a wealthy Moslem family, and studied law in England. Although he became famous as a lawyer and Indian nationalist, he began to fear the Hindu majority. He then became the spokesman for nationalistic aims of the Moslems.

T. WALTER WALBANK

JINRIKISHA, *jin RICK shah*, is a light two-wheeled cart once widely used as a public vehicle in Japan and

China. It usually had a top, or hood, to protect passengers from the weather. The runner, or *hiki*, ran between the shafts and often pulled passengers 20 or 30 miles a day. These men earned little money, but they never seemed to tire. The jinrikisha was invented in Yokohama, Japan, in 1869 by an American Baptist minister named Jonathan Goble. The jinrikisha, or *ricksha*, as tourists often called it, was a popular taxicab in the cities of the Orient. But *pedicabs*, foot-powered tricycles, have replaced jinrikishas in most Asian countries. Jinrikishas were declared illegal in many Chinese cities because authorities felt using "human horses" was undignified. See also **PEDICAB**.

FRANKLIN M. RECK

JIIPIJAPA. See **HAT** (Straw Hats).

JITTERBUG. See **DANCING** (The 1900's).

JIUJITSU. See **JUDO**.

JIVARO, *HEE vah roh*, **INDIANS** are a tribe famous for their fierceness and for their head shrinking. They live in the montaña region of eastern Ecuador. Although the Jivaro are spoken of as a tribe, they are split into a great many small groups which used to fight among themselves.

In early times, the Jivaro lived like tropical-forest Indians of the Amazon Valley. They planted maize, tobacco, and manioc, a root crop. They hunted with blowgun and darts and with spears. The Jivaro fished with traps and with barbasco, a drug that stupefies fish so they can be speared easily. The Inca of Peru probably taught the Jivaro how to keep llamas and guinea pigs. Jivaro men wore a wrap-around skirt and sometimes a poncho. Women wore a full-length robe or dress.

A typical Jivaro village had only one large dwelling, which housed 40 to 80 people. Each village might be fortified with trenches filled with spears. The Jivaro were famous warriors, who fought mainly to avenge the death of a relative. A victorious warrior beheaded his victim and shrank the head. This *tsantsa* became a trophy, like a battle medal.

About 10,000 Jivaro live in Ecuador today. Most of them have given up warfare and live peaceably among themselves and with their neighbors.

CHARLES WAGLEY

JOAN OF ARC, SAINT

JOAN OF ARC, SAINT, is a French national heroine and a beloved saint of the Roman Catholic Church. She was a simple peasant girl who led the French army to victory at the siege of Orléans in 1429. She liberated the city of Orléans from the English by excellent military strategy as well as by personal bravery. She has been called the *Maid of Orléans* ever since.

Jeanne d'Arc was her name in France. She was born at Domrémy, France, in 1412. Like most girls of her time, she never learned to read and write. But she learned all that her devout mother could teach her of sacred things. All the village knew her for her gentleness, charity, and holiness.

Visions which she felt sure were from Heaven made her believe that she was chosen to liberate her oppressed country from the English. At the age of 17, she left her home to fulfill that task. She went to the town of Vaucouleurs to ask the garrison commander for a horse, armor, and an escort of a few men, because she had to see the king. The commander first laughed at her, and then thought she was crazy. But in the end he gave her what she wanted.

Joan Sees the King. Young King Charles VII of France, who was then uncrowned, lived at the castle of Chinon. He was a good but weak man, and he had no

Young Joan of Arc Prays in the Forest before leading the armies of France to drive the English from the city of Orléans. The French soldiers gladly followed her leadership.

From the painting by Nikolai



Art Institute of Chicago

Joan of Arc Stands at the Side of Charles VII as he is crowned King of France in the great cathedral of Reims. Joan wanted to return home then, but Charles would not consent.

money. The Hundred Years' War with the English had divided France. The English had won every battle in their effort to capture the French throne (see HUNDRED YEARS' WAR). Charles could not even reach Reims for his coronation. When he heard of the young girl whom the saints in Heaven had told to save France, he had a glimmer of hope.

But first Charles tested her. He let one of his nobles occupy the throne, and he slipped into the ranks of his courtiers. When Joan came in, she gave the man on the throne only a glance. Then she turned away, walked up to Charles, and curtsied to him as to the king. Even then Charles was only half convinced. But when she told him exactly what he had asked of God when he had prayed alone in the palace chapel, he believed in her. However, he let his learned theologians test Joan again to make sure that her powers came from Heaven. Joan passed that test, too. She then received a sword, a banner, and command over the king's troops (see CHARLES [VII] of France).

Joan The General. At first, the French commanders did not want to obey her. But soon they saw that all went well when they followed her and that nothing succeeded when they disregarded her orders. She liberated the besieged city of Orléans in 1429. Before the attack, every soldier received Holy Communion.

She defeated the English in four other battles. Twice she was wounded, but each time she recovered and went on fighting. Her orders were those of a military genius. She marched into the city of Reims, where Charles was crowned King of France, with the Maid of Orléans standing at his side with sword and banner.

Her Capture. Joan's mission ended when the crown



Visual Education Service

Leading Her Victorious Troops, Joan of Arc enters the city of Orléans after the English have been driven from it. Led by Joan, the armies defeated the English four more times.

was placed on Charles' head. Her voices were silent now, and she wished to return to Domrémy. But the king would not let her go. She gave in to him and led an attack on Paris, which the English still held. The attack failed, and Joan was badly wounded. The Burgundians, French allies of the English, captured her on May 23, 1430, and sold her to the English for 16,000 francs, a sum then slightly over \$3,000. Joan represented the soul of French resistance to the English. They put her in prison for a long time, and she suffered many insults. Then Joan was tried as a witch and a heretic. She insisted to the very end that her visions and voices had come from Heaven. But the court condemned her to be burned at the stake.

A Martyr's Death waited for Joan of Arc on May 30, 1431. Thousands of people stood at the market place of the city of Rouen to watch her die. They saw the young Maid of Orléans face her death with high courage, and turn her glance toward the blue sky. Men wept at the dreadful sight. One or two English soldiers tried to laugh. But a terrified English noble turned from the scene to say, "We are undone; we have burned a saint." The final insult of the English was to refuse to bury her ashes. They were gathered up and thrown into the Seine River.

Joan's strong-minded mother and King Charles VII insisted the case be submitted to the pope, who ordered a new trial. It opened in Paris 24 years after her death. Joan was pronounced innocent in 1456 by Pope Calixtus III. She was beatified by Pope Pius X in 1909, the first step toward declaring her a saint, or *canonizing* her, in the Roman Catholic Church. She was formally declared a saint in 1920 by Pope Benedict XV. Her feast

day, the day of her death, is celebrated throughout France on May 30.

The Memory of Joan of Arc lives in the hearts of millions, and in the stories, novels, biographies, and plays of many authors. Her appeal to the imagination is great. Johann Friedrich von Schiller, a German poet and playwright, wrote the drama *The Maid of Orleans*. George Bernard Shaw, the British playwright, novelist, and critic, wrote *Saint Joan* in 1923. *The Lark*, by the French dramatist, Jean Anouilh, also tells her story. Mark Twain wrote an historical novel about her.

The cottage in which Joan was born still stands as a monument to her memory. A copy of a statue of her by Marie d'Orléans stands inside. The spot where the stake stood in the market place in Rouen is also marked by a statue. Another beautiful figure of her is in the Place des Pyramides in Paris. Monuments to her memory stand in countless other French towns and villages. A huge statue of the Maid of Orléans was erected on Riverside Drive in New York City in 1915. Paintings of her hang in the Metropolitan Museum in New York City and the Art Institute of Chicago. So long as men and women must fight for their country's freedom, Saint Joan of Arc, the saint of soldiers, will be remembered.

LOUIS DE WOHL

Condemned as a Witch, Joan of Arc was burned at the stake in the market place at Rouen, France. She had been wounded and captured while leading her troops in an attack on Paris.

The Art Institute of Chicago



JOB

JOB. See VOCATIONAL GUIDANCE.

JOB, *johb*, is a book in the Old Testament, or Hebrew Bible, named for its principal character. Its author used an ancient Middle Eastern tale as the framework for a debate on why men suffer. The book falls into two main sections: a prologue and epilogue in prose, and a dialogue in poetry.

The *prologue* and *epilogue* tell the story of a wealthy and pious man named Job. A series of calamities strike Job, but he remains steadfast in his faith in God. Finally, he regains his former good fortune. The phrase "the patience of Job" comes from this story.

The *poetic dialogue* takes place between Job and three friends who come to comfort him. They insist that suffering comes from sin, and call upon Job to repent. But he angrily denies their accusations, and insists that he is innocent of sin. After three rounds of argument, a young man named Elihu interrupts the debate to express his ideas. He argues that suffering disciplines men and prevents them from falling into sin. Finally, God Himself addresses Job. He implies that, just as there is beauty and mystery in the world, there is also a moral order. But man cannot always grasp its meaning and, therefore, does not always have the power to understand suffering.

Many scholars believe that the unknown author of Job lived between 600 and 400 B.C. The book is considered one of the literary masterpieces of the world. The Scottish author Thomas Carlyle described it as "the greatest book ever written by pen." ROBERT GORDIS

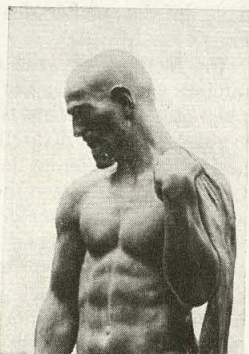
JOB'S DAUGHTERS, INTERNATIONAL ORDER OF, is an organization for girls 12 to 20 years old who are relatives of Masons or of persons affiliated with a Masonic organization. It seeks to inspire desire for knowledge, respect for parents, love for home and country, and reverence for the Bible. The organization lends members money from its educational fund for vocational training. The order has more than 1,293 chapters, called *bethels*, with an active membership of about 115,500. Headquarters of the organization are located at Owosso, Mich.

See also MASONRY.

JOCASTA. See OEDIPUS.

JODL, *YO d'l*, **ALFRED** (1892?-1946), signed the unconditional surrender of Germany at Reims in 1945. At that time, he was the Chief of the Operations Staff of the German Armed Forces High Command. He was a great admirer of Napoleon, and helped Adolf Hitler imitate him. Jodl, though a brilliant man, was a tool of Hitler. As personal military adviser to Hitler, he failed to try to curb the dictator's evil ambitions. Jodl was executed for war crimes committed during World War II. He was born in Bavaria.

LESTER B. MASON



The Art Institute of Chicago

Job was a Biblical character whose patience has become proverbial. This picture is of a sculpture by Emil R. Zettler.

JOEL is the name of the second Biblical book of the Minor Prophets. Nothing is known of the life of this prophet except that he apparently prophesied in Judah. The book of Joel was probably written by more than one author, sometime after 350 B.C. In Chapter 2, the writer expects the sun and moon to be darkened and the stars to withdraw, symbolizing the wrath of God. He also foresaw a great outpouring of divine spirit, so powerful that old and young alike would be able to prophesy.

WALTER G. WILLIAMS

JOEY is a young animal. See KANGAROO.

JOFFRE, *ZHO fr*, **JOSEPH JACQUES CÉSAIRE** (1852-1931), commanded the French armies during the first two years of World War I. He was the first French soldier to be named Marshal of France, the highest military title, since the Franco-Prussian War of 1870.

Joffre was born at Rivesaltes, in the eastern Pyrenees Mountains. He was trained at the French engineering school, the Polytechnic, and served in the Franco-Prussian War. He headed the French engineers in Indochina and supervised the building of a railroad in Senegal, Africa. Later, he became chief of the general staff. He prepared a plan in anticipation of a German invasion of France, and in 1914 stopped the Germans in the Battle of the Marne.

When the struggle changed from a war of movement to a war of position, Joffre accepted the policy of trench warfare. But it resulted in a military stalemate that he was unable to break. In December, 1916, the French government replaced him with General Robert Georges Nivelle because it thought Joffre was too cautious. He then became marshal.

Joffre headed a military mission to the United States in 1917 and another to Japan soon after the end of World War I. In 1918, he became a member of the French Academy.

E. J. KNAPTON

JOQUES, SAINT ISAAC (1607-1646), a Jesuit missionary, preached among the Huron Indians in Canada. He was an early visitor to Sault Sainte Marie. Iroquois Indians captured him in 1643. He escaped, visited Europe, and returned to Canada. Later a Mohawk Indian clan killed Jogues and another priest. Jogues was canonized (made a saint) in 1930. He was born in Orléans, France. MATTHEW A. FITZSIMONS and FULTON J. SHEEN

JOHANAN BEN ZAKKAI, *joh HAN un ben ZACK ay*, was the foremost spiritual and cultural leader of the Jewish people shortly after the time of Christ. The Roman Empire had crushed the Jewish nation and destroyed the temple at Jerusalem. Johanan ben Zakkai founded a new center at Jabneh, where he established a school and a law court, and kept alive the religion and culture of the Jews.

GALEN SAYLOR

JOHANNESBURG, *joh HAN is burg* (pop. 631,911; met. area 1,230,000), is the largest city in South Africa. It lies in southern Transvaal Province in the heart of the Witwatersrand, the richest gold field in the world. The city is 5,689 feet, or more than a mile, above sea level, 30 miles southwest of Pretoria. For location, see SOUTH AFRICA (color map).

About half the people are whites. Gold has made Johannesburg the most important industrial and commercial city in South Africa. Deep gold mines, some below sea level, honeycomb the earth beneath the city. This region also contains rich deposits of coal, iron, and other minerals. These minerals supply the fuel and materials



Jacoby, Pix

Johannesburg lies on a slope of the Witwatersrand (White Water Ridge), one of the world's greatest gold-producing ranges.

for industries that make machinery and metal products.

Massive heaps of waste rocks from the mines rise above the city's skyline. They provide a distinctive background for its buildings. The city has a university, two observatories, an art gallery, and two museums.

Johannesburg was founded in 1886, when prospectors found gold in the vicinity.

HIBBERD V. B. KLINE, JR.

JOHN was the name of 21 legitimate popes of the Roman Catholic Church, of two antipopes, and of one supposed pope who never existed. He was John XV, imaginary predecessor to the real John XV. Because of this imaginary pope, the numbering of the later popes John became confused and inexact. The popes' reigns were:

John I, Saint (523-526)	John XIII (965-972)
John II (533-535)	John XIV (983-984)
John III (561-574)	John XV (985-996)
John IV (640-642)	*John XVI (997-998)
John V (685-686)	John XVII (1003)
John VI (701-705)	John XVIII (1004-1009)
John VII (705-707)	John XIX (1024-1032)
John VIII (872-882)	John XX was none
John IX (898-900)	John XXI (1276-1277)
John X (914-928)	John XXII (1316-1334)
John XI (931-935)	*John XXIII (1410-1415)
John XII (955-964)	John XXIII (1958-)

*John XVI and the first John XXIII were antipopes.

Saint John I (? -526) was sent to Constantinople by the Ostrogothic king, Theodoric. The king wanted John to gain Emperor Justin II's consent to the toleration of the Gothic Arians in northern Italy. John gained imperial recognition of the superiority of the Roman bishop over the patriarch of Constantinople, but did

not accomplish his original mission. When he returned to Rome, Theodoric, who favored the Arian heresy, threw John into prison. He died several days later.

John XII (? -964) was not worthy of the papacy. He was neither intelligent nor pious, and had no deep concern for religion. His morals were notoriously bad. He became active in politics and tried to win the support of the Holy Roman Emperor, Otto I. He was successful only for a short time.

John XIX (? -1032) was elected pope while still a layman. After receiving all the orders of the church, he became Pope John XIX. John worked to conciliate the Eastern Church in order to maintain unity.

John XXIII (1881-) became pope in 1958, succeeding Pius XII. Almost at once, he called for a synod of the Roman diocese, a reform of the Canon Law, and an ecumenical council.

John was born ANGELO GIUSEPPE RONCALLI near Bergamo, Italy. He was the oldest of 12 children of a farm family. He studied theology in Bergamo and in Rome, and was ordained a priest at the age of 23. During World War I, he served in the Italian Army.

After the war, Roncalli entered the diplomatic service of the Vatican. He served as apostolic visitor to the Roman Catholic communities in Bulgaria from 1925 to 1935. He was appointed apostolic delegate to Turkey and Greece in 1935, and in 1944 became nuncio to France. He endeared himself to the French people. In 1953, Roncalli was made a cardinal.

Besides the legitimate John XXIII, there was an antipope at the time of the Western Schism who took the same title. He was born BALDASSARE COSSA, and was made a cardinal by Pope Boniface IX. Cossa joined the cardinals of the Avignon line who had abandoned the Avignon pope, Benedict XIII. These cardinals met at Pisa, and elected a third pope, Alexander V. When Alexander died, Cossa was elected pope of the Pisan line in 1410. He took the name John XXIII. Cossa was forced to call the general council of Constance, and the council deposed him as pope in 1415. He fled and was arrested, but in 1417 the new legitimate Roman Catholic pope, Martin V, succeeded in having Cossa freed.

GUSTAVE WEIGEL and FULTON J. SHEEN

See also POPE (pictures).

Pope John XXIII works at the desk used by his predecessor, Pope Pius XII, in the library of his apartment in Vatican Palace.

Wide World





Brown Bros.

King John of England granted the *Magna Carta* in 1215. The famous charter marked the beginning of democracy in England.

JOHN (1167?-1216), often called **JOHN LACKLAND**, was known as one of England's worst kings. His barons forced him to grant the famous charter of liberties, *Magna Carta*, in 1215. He was often cruel, and was a faithless monarch, but he showed both administrative and military ability.

The youngest of the four sons of King Henry II, in 1199 John succeeded his brother, Richard the Lion-Hearted, as King of England and Duke of Normandy. His rule began badly. By inept politics and the heartless murder of his nephew Arthur, he lost the allegiance of many of his French barons. The shrewd king of France, Philip Augustus, then declared war. In 1205 John was soundly beaten, and lost all the great English holdings in France except Aquitaine.

John pursued a policy in England that brought him into conflict with Pope Innocent III. In 1208 the Pope placed England under an *interdict*, which banned church services. The following year John was excommunicated.

The king now showed his real capacity to rule, if not to rule well. He forced Scotland into a subordinate position, kept the Welsh princes in check, held a firm grip on Ireland, and for a time subdued the barons of England. But his foreign favorites, professional troops, and autocratic financial policy had stirred up great discontent among the English barons. When John attempted to reconquer the lost French territories and failed dismally in 1214, most of the barons and many of the clergy rose in revolt. On June 15, 1215, at Runnymede meadow on the banks of the River Thames, the king was forced to approve the *Magna Carta*.

A few months later, John took up arms against the baronial opposition. The barons, aided by Prince Louis of France, heir of Philip Augustus, appeared certain to win. But, with brilliant strategy, John penned his enemies in London and the adjacent counties. He died suddenly on Oct. 19, 1216, but his throne was safely secured for his son, Henry III.

PAUL M. KENDALL

See also **INNOCENT (III)**; **MAGNA CARTA**; **PHILIP (II)** of France; **RICHARD (I)** of England.

JOHN II, a king of Portugal. See **COLUMBUS, CHRISTOPHER** (First Attempts to "Sell" His Plan).

JOHN III SOBIESKI, so *BYES kee* (1624-1696), was king of Poland when the Turkish menace to Christendom was at its height. Heading a Christian alliance, he defeated the Turks at the gates of Vienna in 1683 and won acclaim as "The Savior of Vienna and Western European civilization." Born at Oleska, Galicia, of noble parents, Sobieski trained for a military career. He gained much military experience as a young man while fighting Cossacks, Tartars, and Turks. He was elected king of Poland in 1674.

CHARLES MORLEY

JOHN VI (1769?-1826) was king of Portugal from 1816 to 1826. He took power as regent in 1792 when his mother, Maria I, became insane. Napoleon's armies threatened Portugal in 1807, and John fled to Brazil, a Portuguese colony. He raised Brazil to the status of a kingdom, and introduced reforms. In 1821 the Portuguese revolt forced him to return to Portugal. His son declared Brazil independent, and became its emperor as Pedro I in 1822. See also **PEDRO (I)**.

J. GARY DAVIS

JOHN, AUGUSTUS EDWIN (1878-), a British painter, became known principally for his portraits of prominent people. They include David Lloyd George, George Bernard Shaw, Montagu Norman, William Butler Yeats, Gustav Stresemann, and Dylan Thomas. His portraits are realistic, and are considered good interpretations of character. John was born at Tenby, Pembrokeshire, Wales, and lived most of the time in London. He occasionally painted subject pictures, and made many etchings.

LESTER D. LONGMAN

JOHN, EPISTLES OF. Saint John the Evangelist is believed to be the author of these three Epistles of the New Testament. The Epistles, or letters, were written within 100 years after the birth of Christ. The first Epistle, the longest, explained Christian doctrine to the faithful in Asia Minor. It speaks of heresies which had arisen, and emphasizes the divinity of Christ. Some authorities think it was written as a letter to accompany the Gospel of John. The second Epistle praises the Christians and warns against false teachers. The third

describes certain features of early Church life. See also

"John Bull" is a symbol of the English people.

JOHN THE EVANGELIST, SAINT.

FULTON J. SHEEN

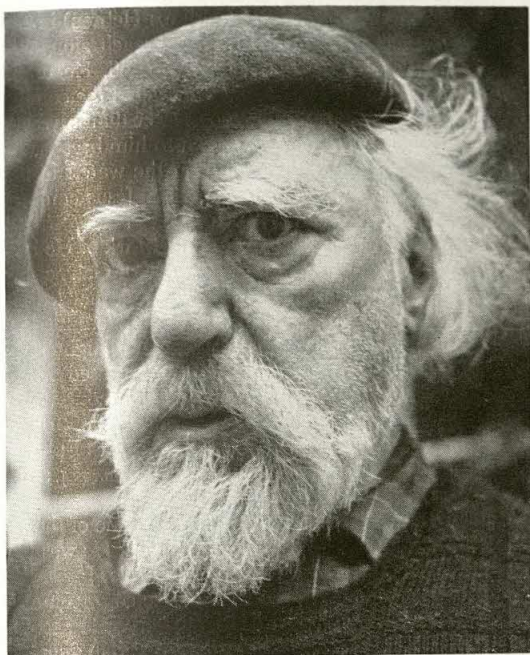
JOHN, GOSPEL OF. See **GOSPELS.**

JOHN, KNIGHTS OF SAINT. See **KNIGHTS OF SAINT JOHN.**

JOHN BROWN'S BODY. See **BROWN, JOHN.**

JOHN BULL is the name popularly used to typify England and the English people, just as *Uncle Sam* typifies the United States and its people. The witty Scottish doctor and writer, John Arbuthnot, first used the name in *The History of John Bull* (1727). In this book John Bull, representing England, appears as a jolly, honest, plain-dealing,





Radio Times Hulton Picture Library

Augustus John, above, a British painter, became known chiefly for his work in portraits. He painted portraits of the principal statesmen at the Paris Peace Conference in 1919.

The Smiling Woman by Augustus John, right, hangs in the Tate Gallery in London. The facial expression and position of the hands show how John expressed character in his portraits.



Tate Gallery, London

hot-tempered farmer. Sir Francis Carruthers Gould later reproduced Arbuthnot's word-picture in a drawing. The name and the picture, through long use, have grown familiar to all. John Bull always wears a "tile" hat and a swallow-tailed coat. His trousers are tucked into boots, and the outlines of the British flag appear across his waistcoat.

MARION F. LANSING

JOHN CARROLL UNIVERSITY is a Catholic school conducted by the Jesuits at University Heights, Cleveland, Ohio. It consists of a college of arts and sciences, a school of business, a graduate school, and an evening college. John Carroll University offers bachelor's and master's degrees in various fields. Day classes are for men, but the evening college, graduate school, and the summer sessions are coeducational. The school was founded in 1886 as St. Ignatius College. In 1923, it became John Carroll University. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

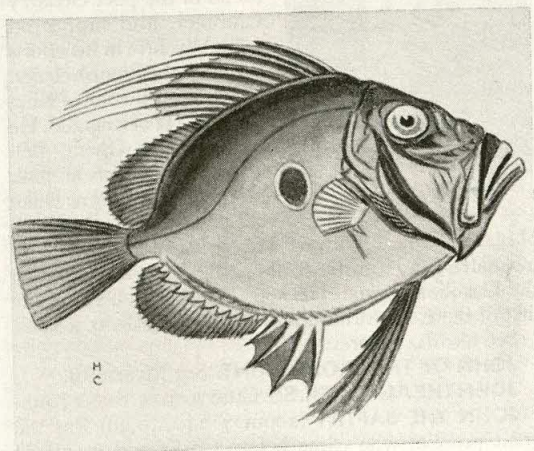
HUGH E. DUNN

JOHN CHRYSOSTOM, SAINT. See **CHRYSOSTOM, SAINT JOHN.**

JOHN DORY is the name of a fish which lives in warm seas. It is thinner than the bass and has long, ribbon-like projections from its dorsal fins. Each fish has a round black spot on the middle of its side. A legend says this spot is a thumbmark left there when Saint Peter took a coin from the fish's mouth.

Scientific Classification. John Dorys are in the family *Zeidae*. The John Dory found in European seas is genus *Zeus*, species *faber*.

LEONARD P. SCHULTZ



The Odd-Looking John Dory is found in large numbers in shallow bays along the coasts of southern Europe, Japan, and Australia. The dory of America is a different species.



Charles Phelps Cushing

John the Baptist Baptized Jesus in the River Jordan about a month before Jesus began His three-year ministry in Palestine.

JOHN HENRY. See HENRY, JOHN.

JOHN MARTIN DAM is a flood control project of the United States government on the Arkansas River. It lies about 20 miles upstream from Lamar, Colo. This structure of concrete gravity and earth stands 153 feet high and 3,692 feet wide. It has storage space for 645,700 acre-feet of water for flood control and irrigation. The federal government completed building John Martin Dam in 1948.

See also DAM.

T. W. MERMEL

JOHN OF GAUNT, *gaunt*, or *gahnt* (1340-1399), DUKE OF LANCASTER, was the power behind the throne during much of the reign of his nephew, King Richard II of England. He fought under his nephew in the French wars for nearly 10 years. The duke was a friend of the poet Geoffrey Chaucer, and supported John Wycliffe in his efforts to reform the English clergy.



Brown Bros.

John of Gaunt

John was the son of King Edward III of England. He was born in Ghent, Belgium, from which he took his name. He became Duke of Lancaster after the father

of his first wife, Blanche of Lancaster, died in 1361. By his marriage to Constance of Castile in 1372, he claimed the Castilian throne. His son, Henry IV, became the first of the Lancastrian kings.

See also LANCASTER.

PAUL M. KENDALL

JOHN OF THE CROSS, SAINT. See MYSTICISM.

JOHN THE ALMONER. See CHRYSOSTOM, SAINT JOHN.

JOHN THE BAPTIST (about 7 B.C.-A.D. 28) was the great prophet who came before Christ and predicted His coming. His mother, Elizabeth, was the cousin of Mary, the mother of Jesus (see ELIZABETH, SAINT). John was born six months before the birth of Jesus. Most of

his life was spent at his home (perhaps Hebron) in the hill country of Judea. He began to preach along the banks of the River Jordan about A.D. 26. He urged people to repent of their sins and predicted the coming of the Messiah and Judge, "One greater than myself." The name *John the Baptist* was given to him because he baptized people, or washed them in the waters of the River Jordan, as a sign of repentance. Jesus came to him to be baptized (Matt. 3: 13-17).

The story of John's death is told in Mark 6. He had been put in prison by Herod, the ruler of Galilee, because he had condemned Herod for having married his brother's wife, Herodias. Herodias was determined to revenge herself. She asked Salome, her daughter, to dance for Herod at a feast. Herod was so pleased by her dance that he offered any reward she wanted. Salome demanded the head of John the Baptist. After John's death, his disciples were found as far away as Ephesus (Acts 19: 3-4).

FREDERICK C. GRANT and FULTON J. SHEEN

See also HEROD (Herod Antipas).

JOHN THE EVANGELIST, SAINT, was one of the 12 apostles, and perhaps the most loyal of all. He was the son of Zebedee, a fisherman. Another apostle, James the Greater, was his brother. He was a close companion of Jesus from the beginning of His ministry. He accompanied the Lord at the raising of Jairus' daughter, at the Transfiguration, and during the agony in the garden of Gethsemane. His fervent belief and emotional temperament sometimes led him to excess (Luke 9: 49-56), but as time passed he became the apostle of love.

John attended the trial of Jesus. He was present at the crucifixion, and accepted the responsibility of caring for Mary, Jesus' mother (John 19: 25-27). He was among the first to investigate the tomb on Easter morning and to find it empty. Following Pentecost, he preached and taught with Peter in Jerusalem until the persecution (Acts 3: 1-4; 23: 8:14). Tradition says he was exiled to the Isle of Patmos for a time. The Fourth Gospel, three Epistles, and the book of Revelation, or Apocalypse, are credited to him. He was the only one of the 12 apostles who died a natural death. Roman Catholics celebrate his feast day on December 27. In the Eastern Orthodox Church, his feast day is celebrated on September 26.

FULTON J. SHEEN and MERRILL C. TENNEY

See also APOCALYPSE; GOSPELS; JOHN, EPISTLES OF; REVELATION.

JOHNNY APPLESEED. See APPLESEED, JOHNNY.

JOHNNY INKSLINGER. See INKSLINGER, JOHNNY.

JOHNS HOPKINS UNIVERSITY is a famous school at Baltimore. Its undergraduate schools, with the exception of McCoy College, are for men only, but its graduate schools are coeducational. For the most part, the university is privately endowed. Units of the university include McCoy College, which includes the divisions of arts and sciences, business, education, and engineering, the Medical Division, which includes The Johns Hopkins Hospital, the School of Medicine, and the School of Hygiene and Public Health; the Applied Physics Laboratory; the School of Advanced International Studies; the Institute for Cooperative Research; and the Operations Research Office. The university also has working arrangements with the Maryland Institute and the Peabody Conservatory of Music.

Most schools of the university are located on the 100-acre Homewood campus in the northern section of



Alan J. Bearden

Gilman Hall, Johns Hopkins' Oldest Academic Building, Houses the Social Sciences and Humanities Departments.

Baltimore. This campus serves as the center for undergraduate and graduate instruction and student life. The buildings housing the schools of medicine and of hygiene and public health and the university's hospital are in the east part of Baltimore. The school of medicine opened in 1893, four years after the opening of the hospital. The staff operates full time, with teaching duties and hospital responsibilities. The hospital includes staffs in gynecology, medicine, obstetrics, ophthalmology, pathology, pediatrics, psychiatry, radiology, and surgery. Postgraduate instruction is offered in addition to work leading to the doctor of medicine degree.

The school of international studies, which became part of the university in 1950, is in Washington, D.C. It was founded in 1943 by the Foreign Service Educational Foundation. Advanced courses lead to the M.A. and Ph.D. degrees. Studies include history, economics, government, and languages. The school has a study branch at the University of Bologna for area training in Western Europe. It also has facilities for specialized study and research at the University of Rangoon in Burma. Corporations which contribute to the foundation or the school are eligible to enroll a representative for special training in international relations.

The Operations Research Office conducts specialized and secret research, testing, and development in military operations for the United States Army and other agencies of the federal government.

There is a typical four-year undergraduate program in arts and sciences. But under another program started in 1951, students are given the opportunity to progress as rapidly as they are able. An undergraduate who desires to work for a doctor's degree may do so without first taking a bachelor's or a master's degree.

The university libraries contain over 1,000,000 books and publications. The students also have access to the William H. Welch Medical Library, the Peabody Library, the Enoch Pratt Free Library, and the Maryland Historical Society collection.

Johns Hopkins maintains an appointment bureau where present and former students can obtain the university's assistance in finding permanent or part time employment, or vacation work.

In the field of extracurricular activities the students have clubs in journalism, dramatics, music, debating, and photography. There are 12 social fraternities. A full schedule of sports is maintained. There is also an ROTC unit.

The architecture of the university is mainly Georgian. Outstanding is Homewood House, built in 1802, and considered an outstanding example of Georgian architecture in the United States.

A gift from Johns Hopkins, a Baltimore merchant, made possible the founding of the university in 1876. Sir William Osler and William Halsted were famous professors. The philosophy of the first president of the university, Daniel Coit Gilman, formed the basis for graduate education in the United States.

Black and gold are the official colors of Johns Hopkins. The athletic teams are nicknamed Blue Jays. One of the university's favorite songs is "Dear Old Johnny Hopkins." For enrollment, see UNIVERSITIES AND COLLEGES (table).

EDITH M. ROTHBAUER

See also HOPKINS, JOHNS.

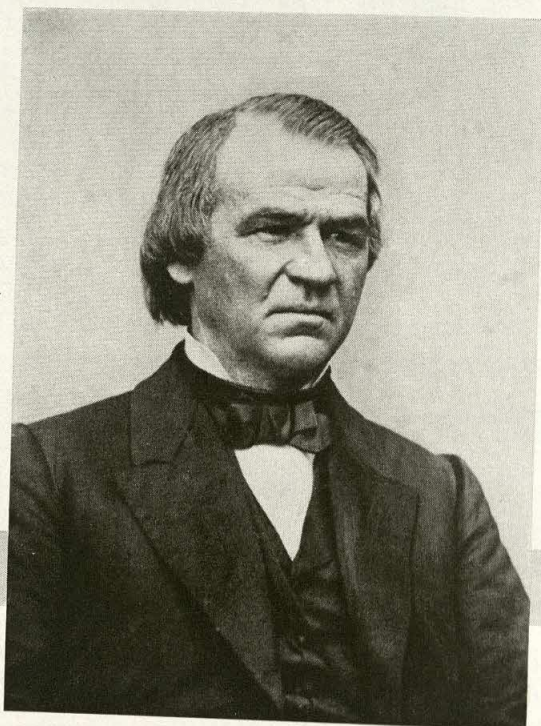
JOHNSON is the family name of two explorers, a husband and wife, who took motion pictures of their adventures. **Martin Elmer Johnson** (1884-1937) and **Osa Helen Johnson** (1894-1953) circled the world six times as motion-picture explorers. Their honeymoon was a 17,000-mile South Sea cruise in a 37-foot boat in 1912. Their most famous film, *Congorilla* (1932), took two years to make and involved living with pygmies for seven months. They also visited the Hebrides (1914), Borneo (1917-1919), and Africa (1921-1936). Osa Johnson wrote *I Married Adventure* and *Bride in the Solomons* and told of her travels. She also published *Jungle Babies*. Johnson was born in Rockford, Ill., and his wife in Chanute, Kans.

RICHARD F. DEMPFWOLFF

See also LION (Hunting).

ANDREW JOHNSON

Andrew Johnson



The United States Flag had 35 stars when Johnson took office.



BUCHANAN
15th President
1857 — 1861



LINCOLN
16th President
1861 — 1865



GRANT
18th President
1869 — 1877



HAYES
19th President
1877 — 1881

Chicago Historical Society

17TH PRESIDENT OF THE UNITED STATES 1865-1869

JOHNSON, ANDREW (1808-1875), the only President ever to be impeached, became Chief Executive upon the assassination of Abraham Lincoln. The Civil War had just ended. Johnson, a Democrat from Tennessee, wanted to carry out Lincoln's program of kind and generous treatment for the defeated Confederate States. But he faced a Republican Congress controlled by men determined to punish the South. Congress passed a series of harsh laws over Johnson's repeated vetoes. Feelings became so strong that the House of Representatives voted to impeach him. But the Senate failed by one vote to remove Johnson from office.

Johnson was one of the most unpopular Presidents. But the American people realized during his lifetime that he had been treated unjustly. Many historians feel that his acquittal in the impeachment trial saved the presidency from being weakened, with the President a mere figurehead.

The stocky Johnson was a typical man of the frontier. A tailor by profession, he was the only President who had never gone to school. His wife taught him how to write. Johnson had the touchy pride of a self-made man. Jefferson Davis, President of the Confederacy, who had served with Johnson in the United States Senate, felt he had "the pride of having no pride."

A serious man, Johnson had neither tact nor humor. One contemporary said his face had "no genial sunlight in it." Johnson lacked Lincoln's skill in getting men to work together. But he was honest, brave, and intelligent. An unshakable faith in the Constitution guided his actions during his 20 years as a U.S. Representative,

a governor, and a U.S. Senator. One of his lawyers at the impeachment trial wrote: "He is a man of few ideas, but they are right and true, and he could suffer death sooner than yield up or violate one of them."

During Johnson's term, the United States purchased Alaska, and Nebraska became a state. Southerners worked to repair their ruined towns and farms, and to reorganize their economy without slavery. The typewriter and the railroad refrigerator car were invented, and the first plastics were used in billiard balls. Mary Baker Eddy founded the Christian Science movement. Newspapers gained increasing importance in politics, and Johnson became the first President to grant a reporter a formal interview.

Early Life

Boyhood. Andrew Johnson was born in Raleigh, N.C., on Dec. 29, 1808. His father, Jacob Johnson, worked as a handyman in a tavern. Jacob had at various other times been the city constable, a sexton, and a porter at the bank. Andrew's mother, Mary McDonough Johnson, was a maid in the tavern. The boy

IMPORTANT DATES IN JOHNSON'S LIFE

- 1808** (Dec. 29) Born in Raleigh, N.C.
- 1827** (May 17) Married Eliza McCardle.
- 1843** Elected to the U.S. House of Representatives.
- 1853** Elected governor of Tennessee.
- 1857** Elected to the United States Senate.
- 1864** Elected Vice-President of the United States.
- 1865** (April 15) Succeeded to the presidency.
- 1868** Acquitted in impeachment trial.
- 1875** (July 31) Died at Carter Station, Tenn.

was the younger of two sons. The elder Johnson died when Andrew was only 3 years old. The widow supported her children by sewing and taking in washing.

Tailor's Apprentice. Andrew's mother apprenticed him to a tailor when he was 14 years old. The shop foreman probably taught him to read. Tailors usually employed someone to read to the workmen as they sat on their tables stitching clothes. Andrew became familiar with the Constitution, American history, and politics through the local newspaper and a few books.

Johnson was supposed to serve as an apprentice for six years. He ran away after two years because he had broken a window as a prank, and feared being arrested. He set himself up as a tailor at Laurens Court House, S.C. A year later, in 1825, he returned home, but failed to reach an agreement with his former master. He then moved west into Tennessee. Learning that his family was in poverty, he returned to North Carolina and in 1826 brought his mother, stepfather, and older

JOHNSON, ANDREW

brother back to Tennessee with him. After several months of wandering, they settled in Greeneville.

Johnson's Family. On May 17, 1827, Johnson married Eliza McCordle (Oct. 4, 1810-Jan. 15, 1876), the daughter of a Scottish shoemaker. He was 18 and she was 16. She taught him to write and to solve simple problems in arithmetic. She also encouraged him to read and to study. The Johnsons had five children.

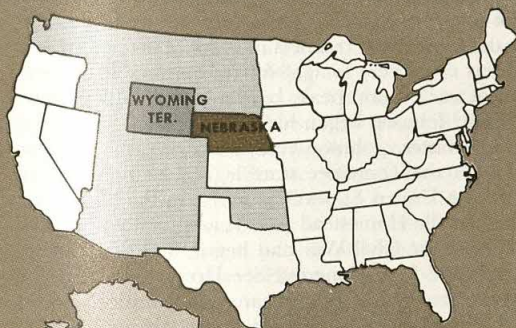
Political and Public Career

Johnson not only studied at home with his wife, but also broadened his knowledge through outside contacts. To train himself in public speaking, he walked four miles several times a week to take part in debates held by the students of two nearby colleges.

Johnson's political beliefs were strongly influenced by those of a fellow Tennessean, Andrew Jackson.

THE WORLD OF PRESIDENT JOHNSON

U.S. population was 39,100,000 in 1869. Congress admitted Nebraska to the Union in 1867 as the 37th state. Wyoming was organized as a territory of the United States in 1868.



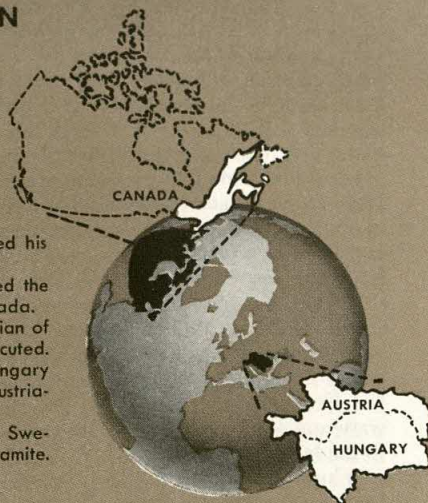
Alaska Was Purchased from Russia in 1867 at a total cost of \$7,200,000.



New Inventions. The first practical typewriter was developed in 1867, and the first railroad refrigerator car in 1868.

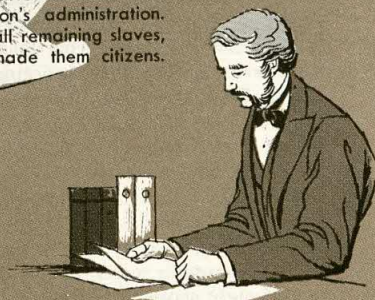


The Reconstruction Era began after the Civil War when Congress passed a series of harsh laws providing military administration of the South.

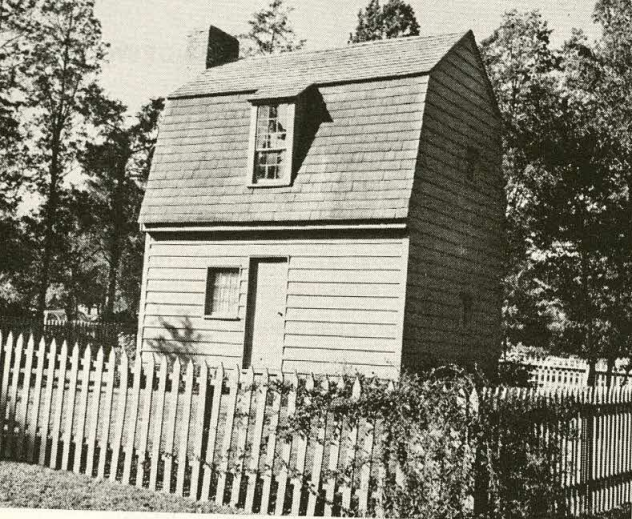


WORLD EVENTS

- 1866 Mendel announced his laws of heredity.
- 1867 The British created the Dominion of Canada.
- 1867 Emperor Maximilian of Mexico was executed.
- 1867 Austria and Hungary united to form Austria-Hungary.
- 1867 Alfred Nobel of Sweden invented dynamite.



The Bureau of Education was established in 1867. Now the Office of Education, it forms a part of the Department of Health, Education, and Welfare.



North Carolina State Dept. of Archives and History

Johnson's Birthplace stands in Raleigh, N.C. His father died when Andrew was 3, and his mother had to rear the family.

Like Jackson, Johnson had firm faith in the common people. He saw himself as their champion against the great landowners who controlled Tennessee. Soon he attracted a following among them. His powerful voice and quick mind helped him sway large crowds.

Local and State Offices. Johnson entered politics in 1828, the year Jackson was elected President. A group of his friends entered him as a candidate for alderman, and he won a place on the town council. After three terms, he was elected mayor of Greeneville. In 1835, the voters sent him to the Tennessee House of Representatives. As a legislator, Johnson opposed a bill for a state system of highways because he felt that state control of internal improvements led to graft. This stand lost him the election of 1837. But his prediction of waste quickly came true, and the voters sent him back to the legislature in 1839.

Johnson became more widely known in 1840, when he campaigned as a Democratic elector-at-large for Martin Van Buren. A year later, he was elected to the state senate. At this time, five slaves were counted as three white men in determining representation in Congress. Johnson made himself unpopular with the large slaveowners of the state by proposing that only whites should be counted in determining the number of representatives for a district. This would have deprived the slaveowners of some of their voting power.

U.S. Representative. Johnson was elected to the United States House of Representatives in 1843. The young Congressman, conscious of his humble origin, but proud of it, avoided Washington society. He kept to himself, worked hard, and read widely. He was re-elected four times.

The issue of slavery became increasingly important during Johnson's years in the House. Although he owned eight slaves, Johnson did not always vote with the slave interests in Congress. He tried to steer a middle course. For example, he supported the admission of Texas as a slave state, but also favored making free states of California and Oregon. In all his policies, Johnson was less influenced by the wishes of the great slaveholders of his state than by the desire of the small

farmers, whom he represented. To assist these farmers, he introduced his homestead bill, which would have thrown open federal lands to poor white settlers. The slaveholders bitterly opposed this measure, knowing that homesteading would add more free states to the Union. Johnson fought for a homesteading law for nearly 20 years.

Governor. In 1851, Johnson's opponents in the state legislature gerrymandered his congressional district so that the Whigs had a majority (see GERRYMANDER). Johnson knew he would be defeated if he ran again for Congress in 1853. Instead, he campaigned for governor of Tennessee, and won easily.

As governor, Johnson favored laws to provide free public education. He also fought unsuccessfully the use of prison labor to compete with free labor. His courage and speaking skill proved valuable in the rough and tumble politics of the day. During his successful campaign for re-election in 1855, he ran not only against the Whigs, but also against the Know-Nothing party (see KNOW-NOTHING). It was a bitter campaign. There were rumors that Johnson would be shot at a public meeting. As he faced the large, unfriendly audience, Johnson fingered his pistol and declared:

"Fellow citizens, I have been informed that part of the business to be transacted on the present occasion is the assassination of the individual who now has the honor of addressing you. I beg respectfully to propose that this be the first business in order. Therefore if any man has come here tonight for the purpose indicated, I do not say let him speak, but let him shoot." Silence fell. Then Johnson began his speech.

U.S. Senator. Johnson returned to Washington in 1857 after the Tennessee state legislature had elected him to the United States Senate. As in the House, he pushed for the Homestead Act. It was finally passed in 1862, after the Civil War had begun and Southerners had resigned from Congress. See HOMESTEAD ACT.

As the slavery question became more critical, Johnson continued to take a middle course. He opposed the antislavery Republican party because he believed that the Constitution guaranteed the right to own slaves. He supported President James Buchanan's proslavery administration, and approved the Lecompton Constitution proposed by proslavery settlers in Kansas (see KANSAS ["Bleeding Kansas"]). At the same time, Johnson made it clear that his devotion to the Union exceeded his devotion to slavery.

Johnson's stand in favor of both the Union and slavery made him a logical compromise candidate for President. Tennessee voted for him in the 1860 Democratic convention, but he withdrew his name. In the election, he supported Democrat John C. Breckinridge, who had been Vice-President under Buchanan.

Johnson believed until almost the last minute that the South would not secede. In December, 1860, he made a powerful speech in the Senate pleading for unity. As for President-elect Abraham Lincoln, he said: "I voted against him; I spoke against him; I spent my money to defeat him; but still I love my country; I love the Constitution; I intend to insist upon its guarantees."

Johnson stood by his principles when the Southern States started to leave the Union. In March, 1861, he denounced the secessionists as traitors. This speech aroused furious opposition in the South. Johnson re-

turned to Tennessee in April, just before a special state election. This election was called to decide if Tennessee would remain in the Union. Angry mobs stopped Johnson's train again and again as he traveled across the state speaking against secession. In the election, eastern Tennessee supported Johnson's position, but the state as a whole voted to secede. The Tennessee militia had orders to arrest Johnson as a traitor, but he escaped to Washington. Johnson was the only Southern Senator who refused to secede with his state.

Military Governor of Tennessee. Union armies won control of western Tennessee in 1862. Then Lincoln appointed Johnson military governor of the state. Johnson planned to win back the rebel sympathizers by a generous policy. But he found it difficult to carry out his plans until Northern troops had taken over more of the state in the fall of 1863. He then held free elections for Tennessee voters who would take an oath against the rebellion and would accept the Emancipation Proclamation. By March, 1864, Tennessee was ready to send representatives to Congress.

Vice-President. Johnson's devotion to the Union and his record as military governor made him a national figure. He had become the most prominent of the War Democrats, the loyal wing of the Democratic party. This group joined the Republicans in 1864 to form the National Union party. The party nominated Lincoln for a second term, and chose Johnson for Vice-President. They won by a large majority. See LINCOLN, ABRAHAM (Election of 1864).

Johnson's inauguration, on March 4, 1865, was a personal disaster. He had recently recovered from an attack of typhoid fever, and was still weak. On his way to the ceremony in the Senate, Johnson stopped to rest in a nearby room. There he drank some whisky, thinking it would strengthen him. In the heat of the Senate chamber, and because of his weakened condition, Johnson became tipsy. His jumbled speech embarrassed even his friends, and newspapers made much of the incident. For many years, Johnson's opponents accused him of drunkenness, but the accusation was unjustified. Lincoln remarked: "I have known Andy for many years; he made a bad slip the other day, but you need not be scared. Andy ain't a drunkard."

On April 14, only six weeks after the inauguration, Lincoln was assassinated. Johnson paid a visit to the dying Lincoln's bedside. Early the next morning, in his hotel room, he took the presidential oath of office.

Johnson's Administration (1865-1869)

At the outset of his administration, Johnson kept Lincoln's Cabinet. The government faced the gigantic

JOHNSON'S CABINET

Secretary of State.....	*William H. Seward
Secretary of the Treasury.....	Hugh McCulloch
Secretary of War.....	*Edwin M. Stanton
	*John M. Schofield (1868)
Attorney General.....	James Speed
	Henry Stanbery (1866)
	*William M. Evarts (1868)
Postmaster General.....	William Dennison
	Alexander W. Randall (1866)
Secretary of the Navy.....	*Gideon Welles
Secretary of the Interior.....	John P. Usher
	*James Harlan (1865)
	Orville H. Browning (1866)

*Has a separate biography in WORLD BOOK.

task of restoring the Southern States to the Union. It had to repair the damage of four years of war, and determine the status of the newly freed Negroes. The assassination of Lincoln made these tasks even more difficult. For the background of this era, see RECONSTRUCTION.

Plans for Reconstruction. Lincoln had hoped to restore the Union as quickly as possible, without punishing the South. Most Democrats and conservative Republicans supported this program. But a group of so-called Radical Republicans favored harsh measures for the South. Led by Representative Thaddeus Stevens of Pennsylvania and Senator Charles Sumner of Massachusetts, they claimed that the seceding states had left the Union, and could return only on terms dictated by Congress. The Radicals wanted to punish the Confederate leaders, give the vote to Southern Negroes, and place the South under military rule. They were motivated by three main factors: (1) the fear that Southerners might try to restore slavery, (2) revenge, and (3) a need for Negro votes. Only with Negro support could the Republicans overcome the combined opposition of Northern Democrats and Southern whites.

Soon after Lincoln's assassination, Johnson announced: "Treason must be made infamous, and traitors must be impoverished." Such statements led many to believe that he shared the Radicals' view. But Johnson showed that he did not. He wanted to be generous to all former rebels except the military and political leaders of the Confederacy. He felt that the individual states should decide the question of Negro suffrage.

Congress was not in session during the first seven and a half months of Johnson's term, and the President proceeded with his mild Reconstruction plan. On May 29, 1865, he issued a proclamation of amnesty, offering a pardon to all Southerners who would take a loyalty oath except the chief leaders of the Confederacy. Johnson appointed provisional governors for the Southern States, and they soon set up governments and arranged for the election of representatives to Congress.

Break with Congress. When Congress met in December, 1865, the Radical Republicans realized they would be outnumbered if the Southern Congressmen were seated. They contended that the Southerners had been illegally elected, and refused to seat them.

Congress then pushed through a series of bills which Johnson vetoed. Most of these bills were passed over his veto. The President insisted that Congress was acting illegally because it did not represent the Southern States. On Washington's birthday, Johnson made a speech in which he called the Radicals "disunionists."

In June, 1866, Congress passed Amendment 14 to the Constitution. This amendment was designed primarily to protect the civil rights of Negroes and to bar former rebels from holding office or voting until 1870. Johnson objected particularly to the clause which forbade former rebels to hold office. He did not see where the South could find other leaders to solve its problems.

Johnson decided to present his point of view to the people before the congressional elections of 1866. He traveled through the East and Middle West in August and September. This "Swing Around the Circle" began well for Johnson, but ended badly. The President lost



From Frank Leslie's Illustrated Newspaper (1868), The Newberry Library, Chicago

Johnson's Impeachment Trial took place between March 13 and May 26, 1868. Chief Justice Chase presided over the court,

which consisted of the members of the Senate. Johnson did not appear at the trial, leaving his defense to a team of lawyers.

his temper when Radical hecklers tried to break up his meetings. His remarks sometimes lacked dignity and restraint. Newspapers exaggerated the situation, reporting that the President was "touched with insanity . . . stimulated with drink . . ." The elections gave the Radicals a majority in Congress.

Increased Tension developed as the struggle between the President and Congress moved toward a climax. Congress passed the Tenure of Office Act, forbidding the President to remove any official without the Senate's approval if his appointment had been confirmed by the Senate (see **TENURE OF OFFICE ACT**). Johnson resisted this attempt to limit the President's power. On Aug. 2, 1867, he suspended Secretary of War Edwin M. Stanton, a Radical sympathizer, and appointed General Ulysses S. Grant as temporary secretary.

Grant had Radical sympathies and, in January, 1868, he gave his office back to Stanton. The President then formally dismissed Stanton and named General Lorenzo Thomas in his place. Stanton locked himself in his office and refused to let Thomas take over. He continued in office until after the impeachment trial of Johnson.

Impeachment had long been a goal of the Radicals. They took advantage of Johnson's dismissal of Stanton to bring formal charges. On Feb. 24, 1868, the House of Representatives voted 128 to 47 to impeach Johnson in a resolution containing 11 articles. The most important articles were the first, which charged that the President had violated the Tenure of Office Act by dismissing Stanton, and the eleventh, which claimed that he had conspired against Congress and the Constitution. This charge cited Johnson's contentions that Congress was not properly constituted.

On March 5, 1868, the Senate organized itself as a court to hear the impeachment. Salmon P. Chase, Chief Justice of the United States, sat as presiding officer. Seven representatives, including Thaddeus Stevens,

Benjamin Butler, and George Boutwell, led the attack. Johnson, who did not appear at the trial, was defended by a team of lawyers including Benjamin Curtis and William M. Evarts.

The Trial began on March 13, 1868, before a crowded Senate chamber. The galleries buzzed with spectators. As the proceedings wore on, it became apparent that the Radicals did not have a strong case. Fair-minded persons became disgusted when they saw that some Senators wanted more to punish Johnson than to obtain justice. Some of Johnson's accusers even tried unsuccessfully to implicate him in the assassination of Lincoln. The President remained calm.

Conviction on the impeachment resolution required a two-thirds vote, or 36 votes from the 54 members of the Senate. Acquittal required only 19 votes, and Johnson knew he could count on those of the 9 Democrats and 3 conservative Republicans. He also needed the support of at least 7 of the 12 "doubtful" Republicans. Much pressure was brought against these Senators. Many letters and telegrams urged them to vote one way or the other. Senator William Fessenden of Maine was warned by a Radical constituent: "Any Republican Senator who votes against impeachment need never expect to get home alive."

On May 16, the Senate voted on the eleventh charge, which Johnson's opponents felt had the best chance of passing. Senator James Grimes of Iowa, who had been stricken with paralysis a few days earlier, was brought in from his sickbed to vote "not guilty." The Radical leader, Thaddeus Stevens, was too ill to walk, and had to be carried in. As the voting proceeded, Johnson picked up the support of six of the seven needed "doubtfuls." Of the original 12 doubtfuls, only Edmund Ross of Kansas remained uncommitted. Suspense mounted as Chase called Ross' name. The Kansan's clear "not guilty" made acquittal certain. The final tally of 19 to 35 acquitted Johnson by one vote. Ten days later, the

Senate took a vote on the second and third articles, with the same result. No further votes were taken, and the trial was over. Subsequent events showed that Ross and several other Senators had ruined their careers by supporting Johnson. But they had saved the power and prestige of the presidency.

Foreign Relations included two important achievements by Secretary of State William Seward. A French army had overthrown the Mexican government, and Napoleon III named Maximilian of Austria as Emperor of Mexico in 1864. This action violated the Monroe Doctrine, but the United States was too involved with the Civil War to do more than protest. In 1865, the government sent troops to the Mexican border and Seward told Napoleon's ambassador that the army would drive out the French by force if necessary. Napoleon withdrew his troops in 1867 and Maximilian was overthrown. See MEXICO (The French Invasion).

Seward's second accomplishment was the purchase of Alaska from Russia in 1867. The Russians feared they might lose the colony to Great Britain, and offered it to the United States for \$7,200,000. Seward finally persuaded enough Congressmen to vote for the purchase. For many years, Americans called Alaska "Seward's folly," little dreaming that it would one day become a state. See ALASKA (American Purchase).

Life in the White House became livelier during Johnson's administration than it had been during the gloomy war years. The household included the Johnsons' two surviving sons, Robert and Andrew; their daughters, Mrs. Mary Stover and Mrs. Martha Patterson; Mrs. Patterson's husband, Senator D. T. Patterson of Tennessee; and the President's five grandchildren. (The Johnson's third son, Charles, and Mary's husband had been killed fighting in the Union Army during the Civil War.) The young people rollicked through the White House, and many children's parties were held.

The President's wife had been an invalid for 20 years, and she lived in quiet seclusion. But her daughter, Mrs. Patterson, was a charming and dignified hostess. She once remarked: "We are plain people from Tennessee, temporarily in high place, and you must not expect too much of us in a social way." According to a member of the staff, the White House seemed like "an old fashioned, hospitable, homelike farm house."

The Final Months of Johnson's administration after the impeachment trial were uneventful. He hoped the Democrats would nominate him for President in 1868.

Eliza McCordle Johnson, an invalid, could not attend to her duties as First Lady.

Library of Congress

Martha Patterson, the President's eldest daughter, served as White House hostess.

Culver Service



But they chose former Governor Horatio Seymour of New York, who lost to General Ulysses S. Grant.

Johnson's last important official act was a proclamation on Christmas Day, 1868, of a complete pardon for all Southerners who had taken part in the Civil War. This proclamation was a mere gesture as far as giving voting privileges back to the Southerners. In Amendment 14 to the Constitution, proclaimed in July, 1868, Congress had reserved for itself the authority to grant amnesty. But the proclamation showed Johnson's desire to end the bitterness that resulted from the Civil War.

Later Years

After leaving the White House, Johnson ran unsuccessfully for Congress in 1869 and 1872. But he was elected to the U.S. Senate in 1874, and thus became the only former President to serve as a Senator. He attended a special short session in March, 1875, and was greeted with applause by his fellow Senators. Bouquets of flowers were delivered to his desk.

After returning to Tennessee, Johnson visited his daughter, Mrs. Mary Stover, at Carter Station. There he suffered a paralytic stroke and died a few days later, on July 31, 1875. He was buried in Greeneville. Mrs. Johnson died five and a half months later, and was buried beside her husband. Authoritative books about Johnson include *Andrew Johnson* by Robert Winston and *The Age of Hate* by George F. Milton. DAVID DONALD

Related Articles in WORLD BOOK include:

Impeachment	Tennessee (picture,
Lincoln, Abraham	Three U.S. Presidents)
President of the U.S.	Tenure of Office Act
Reconstruction (picture,	Vice-President of the
The Impeachment Trial)	United States

Outline

- I. Early Life
 - A. Boyhood
 - B. Tailor's Apprentice
 - C. Johnson's Family
- II. Political and Public Career
 - A. Local and State Offices
 - B. U.S. Representative
 - C. Governor
 - D. U.S. Senator
 - E. Military Governor of Tennessee
 - F. Vice-President
- III. Johnson's Administration (1865-1869)
 - A. Plans for Reconstruction
 - B. Break with Congress
 - C. Increased Tension
 - D. Impeachment
 - E. The Trial
 - F. Foreign Relations
 - G. Life in the White House
 - H. The Final Months

IV. Later Years

Questions

- How did Johnson's Reconstruction policy compare with that of Lincoln?
- How did Johnson's reaction to his state's secession bring him national attention?
- What incident during Johnson's term as governor showed his courage?
- What was unique about Johnson's election to the U.S. Senate in 1874?
- Why did the Radical Republicans impeach Johnson?
- Why was Johnson nominated for Vice-President?
- How did Johnson learn to read and write?
- What act of Johnson annoyed landowners in Tennessee?
- How did Johnson's voting record in the House of Representatives show his moderate views on slavery?
- What did Johnson intend to accomplish with his "Swing Around the Circle"? How was he disappointed?

JOHNSON, "BAN," BYRON B.

JOHNSON, "BAN," BYRON BANCROFT. See BASEBALL (The American League).

JOHNSON, EDWARD (1878-1959), was an opera singer who became general manager of the Metropolitan Opera Company in New York City. After his appointment in 1935, he broke away from the tradition of hiring singers of other nations and gave American singers more opportunities. He retired as manager in 1950. Johnson was born at Guelph, Ont., Canada. He studied voice in Italy, and was leading tenor for five years at La Scala Opera House in Milan. He joined the Metropolitan Opera Company in 1922. DANIEL A. HARRIS

JOHNSON, HIRAM WARREN (1866-1945), served as a Republican United States Senator from California for 28 years. In 1912 he joined Theodore Roosevelt in the Progressive party revolt against the Republican party and ran for Vice-President on the Progressive ticket. Johnson entered the Senate in 1917, and became a leading isolationist. He opposed American membership in the League of Nations, the World Court, and the United Nations.

Johnson was born in Sacramento and attended the University of California. Admitted to the bar in 1888, he practiced law in Sacramento and San Francisco. He was a vigorous prosecutor in the San Francisco graft cases of 1906 and 1907. In 1910, he was elected governor of California. NELSON M. BLAKE

JOHNSON, HUGH SAMUEL (1882-1942), was an American government administrator and soldier. He was in charge of the selective service system during World War I, and became a brigadier general in 1918. From 1919 to 1933, he was in business. In 1933 and 1934 he directed the National Recovery Administration. He next became a newspaper columnist. Johnson was born in Fort Scott, Kan., and was graduated from the United States Military Academy in 1903. He served with the army in Mexico in 1916. DONALD L. KEMMERER

JOHNSON, "JACK," JOHN ARTHUR (1878-1946), an American boxer, won the heavyweight championship of the world from Tommy Burns in 1908. He was the first Negro to hold this title. He successfully defended it five times before losing to Jess Willard in 1915. Johnson was born in Galveston, Tex. He worked as a school janitor, dock hand, and stableboy before beginning his professional boxing career in 1899. He boxed until 1926. Later, Johnson operated night clubs and worked for a carnival. See also BOXING (picture). LYALL SMITH

JOHNSON, JAMES WELDON (1871-1938), was an American Negro poet. He became best known for *God's Trombones* (1927), a collection of sermons in verse. His other books include a novel, *The Autobiography of an Ex-Colored Man* (1912); an anthology of American Negro poetry; and two collections of Negro spirituals. He served as a United States consul in Venezuela and Nicaragua and, for 14 years, as secretary of the National Association for the Advancement of Colored People. Johnson was born in Jacksonville, Fla. JOHN O. EIDSON

JOHNSON, JOSEPH HENRY. See ALABAMA (Famous Alabamians).

JOHNSON, LYNDON BAINES (1908-), became Vice-President of the United States in 1961. He served under Democratic President John F. Kennedy. Before his election to the vice-presidency, Johnson had served



Harris & Ewing

Lyndon B. Johnson

College at San Marcos in 1930.

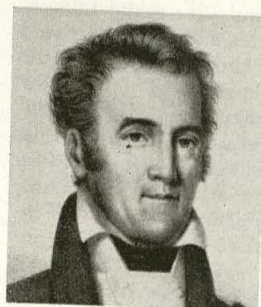
JOHNSON, PAULINE (1862-1913), was a Canadian author of popular romantic verse. She upheld and glamorized Canadian patriotism and Indian lore. Her first volume of verse was *White Wampum* (1895). Her poems were collected in *Flint and Feather* (1912).

She was born EMILY PAULINE JOHNSON in Chiefswood, Ont., and was educated in Brantford, Ont. Her mother was Emily Howells of Bristol, England, and her father was George Johnson, a Mohawk Indian chief with the Indian name of Onwanonsyshon. Miss Johnson's Indian name was Tekahionwake. PETER VIERECK

JOHNSON, RICHARD MENTOR (1780-1850), served as Vice-President of the United States from 1837 to 1841 under President Martin Van Buren. He was the only Vice-President ever elected by the Senate. In the

election of 1836, no vice-presidential candidate received the majority of electoral votes required by Amendment 12. The Senate then chose Johnson, a Democrat, over Francis Granger on one ballot, 33 to 16.

Johnson was born at Beargrass (now Louisville), Ky., and was the first Vice-President from a western state. Congress presented him with a sword for his bravery during the War of



Culver

Richard Mentor Johnson

1812. He was reputed to have killed the great Indian chief, Tecumseh. Johnson served in the U.S. House of Representatives at various times, and as a U.S. Senator from 1819 to 1829.

IRVING G. WILLIAMS

JOHNSON, SAMUEL (1709-1784), was one of the first writers to compile an organized and illuminating dictionary of the English language. But he is remembered more for his personality than for his writings. His style in prose and poetry was measured and heavy. Oliver Goldsmith, the poet and playwright, said Johnson made "little fishes talk like whales."

Johnson exerted great influence. With the painter, Sir Joshua Reynolds, he organized the London Literary Club. There he outtalked the greatest literary men and artists of his day. He became a judge and lawgiver for literature during the reign of King George III.

Boswell's Life of Johnson. Most of our knowledge of Johnson has come from a remarkable biography of

him written by his friend, the lawyer James Boswell. Boswell gave us one of the fullest portraits of a man ever written. He loved and admired Johnson, but he did not hesitate to show Johnson's faults and weaknesses as well as his wisdom, fearlessness, and generosity. His *The Life of Samuel Johnson* pictures Johnson as a large, awkward man, badly dressed and rude in manner. He was a man who could tell his hostess to stop talking nonsense, or call a distinguished guest a "vile Whig." But Thomas Carlyle said that Johnson was a "mass of genuine manhood, a man who would starve before he bartered away his independence, and who was loved and honored by all who knew him."

Early Years. Johnson, the son of a poor bookseller, was born at Lichfield. He started studying at Oxford University in 1728, but had enough money to attend for only two years. In 1735 he married a woman much older than he was, and, with her dowry of 800 pounds (about \$4,000), they began a private school in Lichfield.

First Successes. The school soon failed, and Johnson moved to London to try to make a living by writing. Years of failure and discouragement followed. He began writing for the *Gentleman's Magazine* in 1738 and published his first poem, *London*, in the same year. Gradually, he became known. *The Vanity of Human Wishes* and his tragedy *Irene* appeared in 1749. He also published a periodical, the *Rambler* (1750-1752), and wrote the *Idler* papers (1758-1760).

Johnson's *Dictionary of the English Language* was published in 1755. His humor and prejudice, as well as his learning, appear in this work. For example, he defines oats as "a grain which in England is generally given to horses, but in Scotland supports the people."

Later Works. Johnson wrote his only novel, *Rasselas, Prince of Abyssinia*, in 1759. He published an edition of William Shakespeare's plays in 1765, and in 1775 he wrote *Journey to the Western Islands of Scotland*, a description of a trip that he took with Boswell.

His sound judgment as a critic made the 10 volumes of *The Lives of the Poets* (1779-1781) his most distinguished work. This work includes Johnson's critique of 52 famous English poets.

See also BOSWELL, JAMES; ENGLISH LITERATURE (The Age of Johnson).

JOHNSON, THOMAS. See MARYLAND (Famous Marylanders).

JOHNSON, WALTER PERRY (1887-1946), famed in baseball history as "The Big Train," pitched 414 victories for the Washington Senators. Many still regard him as the greatest fast-ball pitcher of all time. Johnson starred for the Senators from 1907 to 1927, and set a record for the most strikeouts with 3,497. In 1913, he pitched 56 consecutive innings without allowing a run. He pitched seven opening-game shutouts. Born on a farm in Humboldt, Kan., Johnson was discovered by a baseball scout, pitching for \$75 a month in Weiser, Idaho.



Ewing Galloway

Samuel Johnson

G. E. BENTLEY

ED FITZGERALD

JOHNSTON, ALBERT SIDNEY

JOHNSON, SIR WILLIAM (1715-1774), was a soldier, Indian agent, and landowner in colonial New York. A major general in the French and Indian War, he defeated the French at the battle of Lake George. As a reward, he was made a baronet. Johnson became friendly with the Mohawk Indians and helped bring them over to the British side in the wars against France. The British government made him "Superintendent of Indian Affairs in the North."

Johnson gradually acquired more than 500,000 acres of land in the Mohawk and upper Susquehanna valleys, which he ruled almost as a feudal lord. He founded Johnstown as the "capital" of his huge domain, and encouraged emigrants from northern Ireland and the Scottish Highlands to settle on his lands. Johnson was born in County Meath, Ireland.

IAN C. C. GRAHAM

JOHNSON, WILLIAM SAMUEL (1727-1819), was an American political and educational leader. A conservative, he took no part in the Revolutionary War. In 1784 he was elected to the Continental Congress, and served until 1787. He was a member of the Constitutional Convention of 1787, and signed the United States Constitution. He was one of the first two U.S. Senators from Connecticut, but he retired in 1791. Johnson served as president of Columbia College, New York City, from 1787 to 1800, but retired because of poor health. He was born in Stratford, Conn.

KENNETH R. ROSSMAN

JOHNSON C. SMITH UNIVERSITY is a coeducational liberal arts and theological school at Charlotte, N.C. It is controlled by the United Presbyterian Church. The college offers a broad general education, and has a school for ministers. Smith was founded in 1867. For enrollment, see UNIVERSITIES (table).

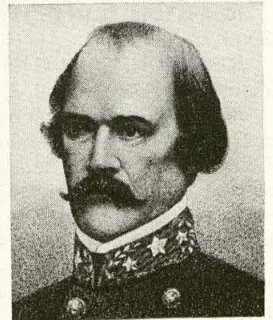
JOHNSON COUNTY CATTLE WAR. See WYOMING (The Johnson County Cattle War).

JOHNSTON, ALBERT SIDNEY (1803-1862), was a Confederate general highly regarded by Confederate President Jefferson Davis. In April, 1862, he attacked General Ulysses S. Grant's forces at Shiloh, Tenn. Grant held a strong position and commanded more men than Johnston. Yet Johnston drove the Federal troops from their positions and almost won the battle. But he was wounded at the crucial moment and bled to death. General Pierre Beauregard then took command, but Union reinforcements drove the Confederates from the field. Before the battle, Johnston had been in charge of Confederate operations in Tennessee and Kentucky.

Johnston was born at Washington, Ky. He was graduated from the United States Military Academy in 1826. He served in the Black Hawk War and then in Texas in the war for independence from Mexico. He commanded Texas forces in 1837, and was Secretary of War for the Republic of Texas from 1838 to 1840. Johnston fought in the Mexican War, and from 1858 to 1860 served in Utah.

FRANK E. VANDIVER

Albert S. Johnston
Chicago Historical Society



JOHNSTON, ALVANLEY

JOHNSTON, ALVANLEY (1875-1951), was the chief officer of the Brotherhood of Locomotive Engineers from 1925 to his death. He began railroad work at 17 as a callboy. He rose to engineer and became active in Brotherhood affairs. As chief officer, he restored the Brotherhood to financial soundness. In 1946, Johnston led the union in a national strike, but ended it a few minutes before President Truman asked Congress for authority to draft the strikers. Johnston was born in Toronto, Ont.

JACK BARBASH

JOHNSTON, ERIC (1895-), is an American businessman. He served as president of the United States Chamber of Commerce four times, from 1942 to 1946.

During World War II, Johnston served on important management-labor committees for the government. In 1945, he succeeded Will Hays as president of the Motion Picture Producers and Distributors of America. He wrote *America Unlimited* (1944) with Eugene Lyons. This book is based on his extensive travels.

Johnston was born in Washington, D.C., but grew up in the West. He received a law degree from the University of Washington in 1917. During the 1920's and 1930's, he was in the electrical and building supply businesses in Spokane, Wash.

DONALD L. KEMMERER

JOHNSTON, JOSEPH EGGLESTON (1807-1891), was a Confederate general during the Civil War. He commanded the main Confederate army in Virginia in 1861 and early 1862. He tried in

1863 to relieve Vicksburg, Miss., which was besieged by General U. S. Grant, but had too few men. In December, 1863, Johnston took charge of the Army of Tennessee and in 1864 began a brilliant retreat in front of General William T. Sherman's advance toward Atlanta.

Johnston was relieved by President Jefferson Davis, who thought him too cautious. He did not command again until 1865 when he fought at Bentonville, N.C. He surrendered his army to Sherman's troops in April, 1865. Johnston was born in Prince Edward County, Virginia. He was graduated from the U.S. Military Academy, and became Quartermaster General of the U.S. Army just before the Civil War. FRANK E. VANDIVER

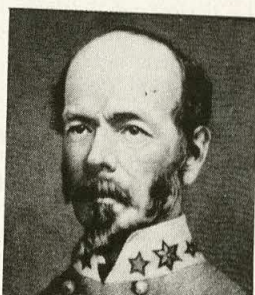
See also CIVIL WAR (Fort Henry; Closing In).

JOHNSTON, OLIN D. See SOUTH CAROLINA (Famous South Carolinians).

JOHNSTON, SAMUEL. See NORTH CAROLINA (Famous North Carolinians).

JOHNSTON ISLAND is a tiny coral island about 800 miles southwest of Honolulu. For location, see PACIFIC OCEAN (color map). The island covers less than half a square mile. It was named for the captain of a British warship which visited it in 1807. It became a refuge for sea birds in 1926, and was placed under the United States Navy in 1934. During World War II, the United States enlarged it with coral dredged from the nearby lagoon, to make an airfield.

EDWIN H. BRYAN, JR.



Chicago Historical Society
Joseph Johnston

JOHNSTOWN, Pa. (pop. 53,949; alt. 1,185 ft.), is one of the centers of soft, or bituminous, coal mining in Pennsylvania. It lies in a valley of the Allegheny Mountains about 75 miles east of Pittsburgh. For location, see PENNSYLVANIA (color map). Johnstown's chief industry is the production of steel. Other products include radiators, furniture, clay products, and textiles.

Johnstown was named for a Swiss immigrant, Joseph Johns, who settled there in 1793. In the 1850's, William Kelly developed a new method of making steel there, similar to the Bessemer process. In 1889, Johnstown became a city. That same year the dam of the South Fork Reservoir, about 12 miles east of the city, burst during heavy rains. A torrent of water devastated the city in less than an hour. Over 2,000 persons were dead, and there was property damage of more than \$10,000,000. In 1936, another flood swept over Johnstown, taking 25 lives and causing \$40,000,000 damage. A flood-control system was built in 1937. Johnstown has a commission form of government. S. K. STEVENS

JOHORE, *joh HOHR*, is the southernmost sultanate of the Federation of Malaya. For location, see MALAYA (map). It covers 7,330 square miles and has about 738,000 people. Many Chinese and East Indian laborers work on the palm-oil, pineapple, and rubber plantations in the interior western half of the state. The sparsely settled eastern half has deposits of high-quality iron ore. Great Britain controlled Johore from 1885 to 1957. See also SINGAPORE.

JOHN F. CADY

JOINER is a carpenter who can do precise, complicated work. Literally, a joiner is one who joins together pieces of wood to make a useful product. The term originated in the British shipbuilding industry years ago. The joiner was responsible for shaping the structural parts of the ship and fitting them together. The term joiner now applies to any woodworker who specializes in joining pieces of wood that have intricate cuts and shapes. Joiners do not make up a separate trade group.

PETER TERZICK

JOINT. See GEOLOGY (Some Terms).

JOINT is the place at which two bones meet in the skeleton of the body. This place is also called an *articulation*. Joints may be *immovable* or *movable*. Immovable joints are found where the bones are almost directly in contact with each other, and are separated only by a thin layer of connective tissue. These joints usually are capable of enough movement in case of accident to keep a bone from breaking. The joints of the cranium, or skull, are immovable and help protect the brain.

Movable joints are classified as *hinge* joints, *pivot* joints, and *ball-and-socket* joints. Hinge joints are those which permit a forward and backward motion in one plane, like the motion of a door on its hinges. The joints at the knee and fingers are hinge joints. Pivot joints give a rotating motion, such as the movement of the head from side to side. The elbow has both hinge and pivot joints. Ball-and-socket joints allow the greatest freedom of movement. These joints are made up of a large round end of a long bone which fits into the hollow of another bone. The hip and shoulder are made up of such ball-and-socket joints. The arms, however, have a greater range of motion than the legs because of the ligament arrangement and because the shoulder blade is not so firmly anchored to the vertebral column.

The movable joints are protected in several ways. A

Johnstown, Pa., was completely covered by a flood in 1889 when a dam burst during heavy rains. The rushing water demolished the city, killing more than 2,000 residents.



Bettmann Archive

layer of cartilage, or gristle, protects the ends of bones which move over one another. The elasticity of the cartilage breaks the force of sudden jars. The smooth texture of the cartilage also makes it possible for the joint to move easily.

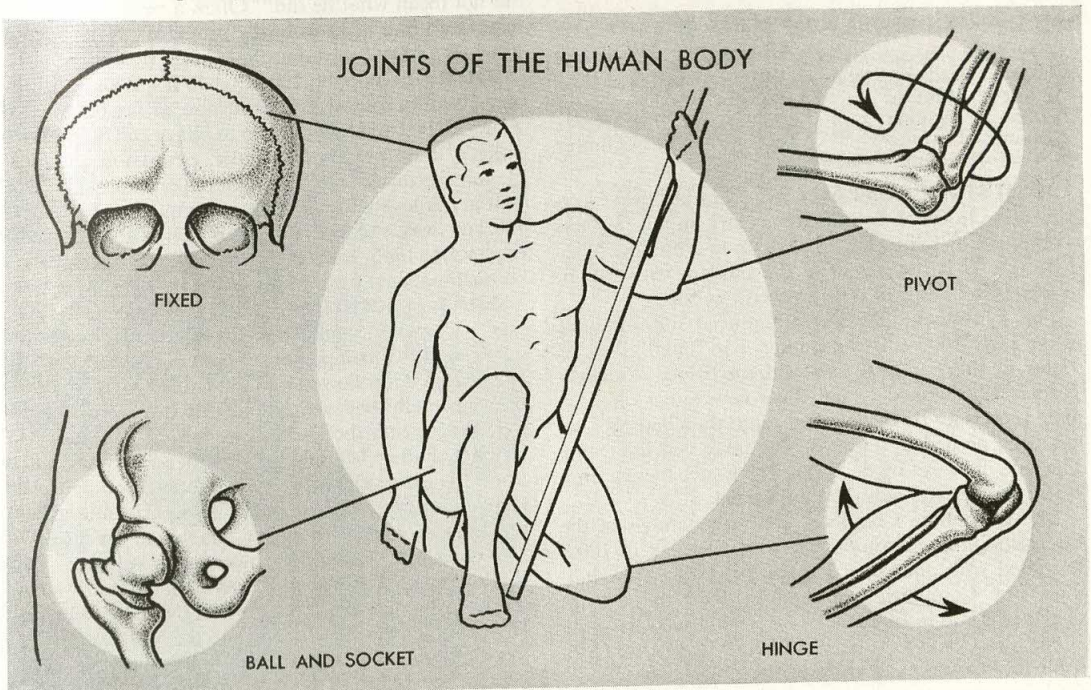
Movable joints are also protected by a liquid substance called *synovial fluid*, which keeps the joints moist, or lubricated. Bones are held in place at the joints by strong ligaments which fasten to the bones above and below. At the hip a number of ligaments circle the bone like a collar to keep the joint in place.

Joints are often sprained or dislocated. A sprain occurs when the ligaments around a joint are torn or badly stretched. Serious sprains are painful, and if neglected may result in stiffening of the joint. Dislocated joints should be treated as soon as possible by a physician. Inflammation of the joints may result from infections or from disturbances such as arthritis.

MARSHALL R. URIST

Related Articles in WORLD BOOK include:

Ankle	Cartilage	Hip	Sprain
Arthritis	Dislocation	Ligament	Suture
Bunion	Gout	Rheumatism	



JOINT CHIEFS OF STAFF

JOINT CHIEFS OF STAFF (JCS) are the principal military advisers to the President of the United States and the Secretary of Defense. They include a chairman, the chiefs of staff of the army and air force, and the chief of naval operations. The commandant of the marine corps serves as a member when the Joint Chiefs consider marine corps matters. The chairman is appointed by the President with the approval of the Senate. He presides over meetings of the JCS and manages the Joint Staff. He outranks all other officers of the armed forces.

The Joint Chiefs prepare military plans and review over-all military requirements. They represent the United States on military committees of international organizations. They also direct the unified and specified combatant commands under the Secretary of Defense.

The Joint Staff assists the JCS. It consists of a director and about 400 other officers. It includes the directorates of personnel, intelligence, operations, logistics, plans and policy, and communications and electronics.

The Joint Chiefs of Staff developed from the Combined Chiefs of Staff organization set up by the United States and Great Britain early in World War II. It held its first meeting in 1942. Its members were the army chief of staff, chief of naval operations, and chief of the army air forces. Later the President's chief of staff also became a member. In 1947, Congress established the JCS as a permanent agency within the National Military Establishment (now Department of Defense). It also set up the Joint Staff of about 100 officers under the JCS. Congress in 1949 created the office of Chairman of the Joint Chiefs of Staff. In 1958, it expanded the powers of the JCS and increased the Joint Staff to 400 officers.

JOHN C. BOLLENS

See also DEFENSE, DEPARTMENT OF; NATIONAL DEFENSE.

CHAIRMEN OF THE JOINT CHIEFS OF STAFF

Name	Year Appointed	President
*Omar N. Bradley	1949	Truman
*Arthur W. Radford	1953	Eisenhower
*Nathan F. Twining	1957	Eisenhower
Lyman L. Lemnitzer	1960	Eisenhower

*Has a separate biography in WORLD BOOK.

JOINT-STOCK COMPANY is a form of business organization in which the money to carry on this business is obtained by selling shares of stock to a number of individuals. It is the parent of the modern corporation, in which stock is sold to the general public.

The joint-stock idea was introduced into business in the early 1500's, after explorers had found all-water routes to the Far East and had discovered America. Traders who wished to use these new routes required more money for their ships and cargo than had ever before been needed in business. The trade was risky, too. The sale of shares made it possible to get money from many people, and also divided the risk.

The East India Company, the most famous of the English joint-stock companies, was chartered in 1600. It traded with and ruled India until 1858. The Hudson's Bay Company, chartered in 1670 to trade in Canada, is still in business.

JOHN ALAN APPLEMAN

See also CORPORATION; EAST INDIA COMPANY; HUDSON'S BAY COMPANY; PARTNERSHIP.

JOINT TENANCY. Two or more persons sometimes share the title to a piece of real property, with equal rights to the use and enjoyment of the property during their lives. At the death of each owner, the entire estate goes to the survivors. The last survivor becomes full owner of the property, with an estate in fee simple. This kind of ownership is called *joint tenancy*.

Joint tenancies were once limited to real estate, but today a joint tenancy may be created in personal property as well. For example, two or more persons might make this kind of arrangement in regard to the contents of a safety deposit box or a bank account. In joint tenancy, the survivor receives the money or property even if the deceased has directed otherwise in his will.

The right of survivorship distinguishes a joint tenancy from the ordinary *tenancy in common*. Under a tenancy in common, each tenant's share passes to his own heirs at the death of the tenant. A joint tenant can convey his share in the estate to some other person, but this act severs the joint tenancy. The estate becomes an ordinary tenancy in common.

One form of joint tenancy is the tenancy of real estate *by the entirety*. Such a tenancy can be ended only by consent or by the death of one party, which leaves the other party as sole owner. Only a husband and wife can be tenants by the entirety.

WILLIAM TUCKER DEAN

See also REAL ESTATE; TENANT.

JOINVILLE, JEAN DE. See FRENCH LITERATURE (Early Prose).

JOIST. See BUILDING CONSTRUCTION (Girders); HOUSE.

JOKE is something said or done that amuses people or makes them laugh. Most jokes are little stories told to make a person laugh. But some are harmless tricks played on persons, such as the usual jokes played on April Fool's Day. Other jokes are called *practical jokes*, and may be quite harmful. Sometimes the expression "He did it as a joke" is used, meaning that "He did not mean what he did." Often a person or thing is referred to as a joke, as in the sentence, "The election was just a joke," meaning that it was ridiculous.

JOLIET, Ill. (pop. 66,780; alt. 640 ft.), is an industrial city 40 miles southwest of Chicago. It lies on the Des Plaines River and the Chicago Sanitary and Ship Canal. Joliet's industries produce wire, petroleum products, chemicals, machinery, and wallpaper. Stateville penitentiary is located near Joliet. Originally called *Juliet*, the city was renamed for Louis Joliet, the Canadian explorer, in 1845. Joliet is the Will County seat. It has a council-manager form of government.

PAUL M. ANGLE

JOLIET, or JOLLIET, zoh LYEH, LOUIS (1645-1700), was a Canadian explorer. With Father Jacques Marquette and five companions, Joliet discovered that the Mississippi River flowed into the Gulf of Mexico. It had been generally believed before this discovery that the river flowed into the Pacific Ocean.

Joliet, Father Marquette, and their party set out to trace the Mississippi in 1673. Louis Frontenac, the Canadian governor, sent them. The party started from St. Ignace on the Straits of Mackinac on May 17. Traveling in birchbark canoes, they crossed Lake Michigan to Green Bay and then paddled southwest on the Fox River. They went overland to the Wisconsin River, and down the Wisconsin to the Mississippi. They followed the Mississippi's winding course southward beyond the mouth of the Arkansas River. Joliet and his

companions did not go all the way to the Gulf of Mexico because they were afraid of Spaniards. They returned by way of the Illinois River and Lake Michigan. The party had paddled more than 2,500 miles. See **CHICAGO** (Early Days); **MARQUETTE**, **JACQUES**.

Joliet lost his valuable maps and papers when his canoe upset in the Lachine rapids of the Saint Lawrence River. But he made several maps from memory. As a reward for his work, Joliet received the island of Anticosti in the gulf of Saint Lawrence. In 1697 he received Joliet, a town south of Quebec which his descendants still possess. Joliet was born in Quebec. He studied to be a priest at the Jesuit College there.

W. R. WILLOUGHBY

JOLIOT-CURIE, FRÉDÉRIC. See **CURIE** (Irène Joliot-Curie).

JOLSON, AL (1886-1950), was a popular American singer and actor. He sang in vaudeville and minstrel shows, and gained his first success in 1909 when he substituted for the star of a musical. He sang a "mammy" song in "blackface," for which he later became famous. Jolson starred in *The Jazz Singer* and *Singing Fool*, two of the first sound motion pictures. He had a radio program for many years. He died soon after returning from Korea, where he had entertained American troops. He was born ASA YOELSON in Russia. NARDI REEDER CAMPION

JONAH was a Hebrew prophet of the 700's B.C. (II Kings 14:25). He is the hero of the Old Testament book of Jonah. An unknown author wrote the book about 400 B.C.

The story says God commanded Jonah to go to Nineveh, an ancient Assyrian city, to warn it of destruction. Instead, he went to Joppa and took a ship bound for Tarshish (see **TARSUS**). A great storm arose, and the frightened sailors believed an evil person on board caused it. They drew lots, accused Jonah, and threw him into the sea. The storm stopped immediately. Jonah was swallowed by a big fish sent by God to save him. After three days, Jonah was cast out onto dry land. God

Jonah Lived in the Stomach of a Great Whale for three days after his shipmates cast him overboard during a lashing storm.

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JONES, ELI STANLEY

again ordered him to go to Nineveh, and Jonah obeyed. He preached, and the people repented so that God forgave them. Jonah became annoyed because his prophecy of destruction would not now come true. The book ends with God asking Jonah, "Are not people important, too?"

Many scholars believe the story contains a message. Jonah represents the Hebrew nation, and the big fish symbolizes the Babylonian captivity. Nineveh is the world waiting for God's message. Jonah's call is the call of God to the Hebrews to take His message to other people. The book is the greatest missionary challenge ever written to the Hebrews.

WALTER G. WILLIAMS

JONATHAN. See **DAVID**.

JONATHAN, BROTHER. See **BROTHER JONATHAN**.

JONES, "BOBBY," ROBERT TYRE (1902-), an American golfer, was the only person to win the United States Open, the British Open, the United States Amateur, and the British Amateur tournaments in one year. He won all four in 1930 and then retired from tournament play. He had won the U.S. Open four times, the British Open three times, and the U.S. Amateur five times. American sports editors in 1950 voted him "the outstanding golfer of the years 1900 to 1949." Jones was born in Atlanta, Ga.

PAT HARMON

JONES, "CASEY," JOHN LUTHER (1864-1900), was the brave railroad engineer who gave his life to save the lives of his passengers and crew. On the night of Apr. 29, 1900, he brought the Illinois Central's fast mail train, the New Orleans-to-Chicago "Cannonball," into Memphis, Tenn. He volunteered to run the southbound train when he learned the engineer was sick. Early the next morning, through no fault of his, Casey Jones' Engine 382 struck the rear of two freight trains protruding from a siding at Vaughan, Miss. His body was found in the wreckage with one hand on the throttle and the other on the air-brake lever. If he had not stayed in the engine to put on the brakes, the crash would have been much worse. The song about him has immortalized the skill, courage, and drama of railroading. He was born in Cayce, Ky.

B. A. BOTKIN

JONES, CHRISTOPHER, was the captain of the *Mayflower*. See **PLYMOUTH COLONY** (The Honored 102).

JONES, ELI STANLEY (1884-), became one of America's best-known missionaries. He started as a Methodist missionary pastor and educator among low-caste Indians in Lucknow, India, in 1907. He was gradually drawn toward a new type of missionary effort among high-caste Indians. He showed this group that Christianity was at home in Indian life and culture. His keen interest in India made him a close friend of such Indian leaders as Mohandas Gandhi and Rabindranath Tagore, a poet.

Jones' first book, *The Christ of the Indian Road* (1925), achieved great success and was translated into 12 languages. He also wrote *Christ at the Round Table* (1928), *The Christ of Every Road* (1930), *Christ and Human Suffering* (1933), and *The Way* (1946).

Although Jones was elected a bishop of the Methodist Church in 1928, he refused the office in order to continue his missionary work. Jones believed that there is a pattern in the teachings of Jesus for personal and national conduct which could make the world "The Kingdom of



Chicago Historical Society; Culver



John Paul Jones, above, was an American naval hero. Jones led his men in the fierce fight against the English warship *Serapis* in 1779, left.

God." He devoted much effort to a program for uniting all the world's churches to achieve this "Kingdom." Jones was born in Clarksville, Md. He was graduated from City College of Baltimore, and from Asbury College in Wilmore, Ky.

JONES, ELIZABETH ORTON (1910-), is an American artist and author-illustrator of children's books. She won the Caldecott medal in 1945 for her illustrations in *Prayer for a Child*. She wrote and illustrated *David* (1937), *Maminka's Children* (1940), *Twig* (1942), and *Big Susan* (1947). She also illustrated books written by her mother, Jessie Orton Jones, and by other authors. Miss Jones was born in Highland Park, Ill. She studied at the Art Institute of Chicago and also studied art in France.

L. J. TRINTERUD

JONES, INIGO (1573-1652), revolutionized English architecture and set its course for about a hundred years. He introduced simple, coherent designs and applied many ideas of Andrea Palladio in his work (see PALLADIO, ANDREA). His chief works were the Queens' House in Greenwich and the banquet hall in the Whitehall palace group. His remodeling of Saint Paul's Cathedral influenced Sir Christopher Wren's later work (see WREN, SIR CHRISTOPHER). Jones' Covent Garden was the first of the famous London squares.

RUTH HILL VIGUERS

Jones was born in London. First a painter, he designed scenery for court plays. He spent three years in Italy where the architect Andrea Palladio deeply influenced him. Jones returned to England and became royal architect to King James I.

RICHARD M. BENNETT

JONES, JESSE HOLMAN (1874-1956), an American businessman, served as a public official under President Franklin D. Roosevelt. He became chairman of the Reconstruction Finance Corporation in 1933 and supervised the spending of billions of dollars. He served as chairman of the Export-Import Bank and as Secretary of Commerce from 1940 to 1945. Jones was born in Robertson County, Tennessee. He became wealthy as a lumberman, banker, newspaper publisher, and builder in Texas. Jones was noted for his contributions to charitable organizations. He wrote *Fifty Billion Dollars* (1951), a story about his government work.

W. H. BAUGHN

JONES, JOHN PAUL (1747-1792), is often called "The Father of the American Navy." His heroism in fighting against a larger and better-equipped enemy

fleet established a tradition which has never been forgotten. His reply to a British demand to surrender, "I have not yet begun to fight," has become a famous navy slogan.

Jones was born on July 6, 1747, in Kirkcudbrightshire, Scotland. His name at birth was John Paul. He went to sea when he was 12 years old, and in 1769 was given command of the merchant ship *John*. On a trip to the West Indies, a sailor died a few weeks after Paul had flogged him, and Paul was charged with murder. But he was later freed, and became captain of the *Betsy* in 1773. His crew mutinied, and one was killed. Paul was again accused of murder, and fled to America. There he added Jones to his name, probably to hide his true name.

Commissioned in Navy. The outbreak of the Revolutionary War gave Jones a chance to go back to sea. He received a commission as a lieutenant in the Continental Navy on Dec. 7, 1775, and became first lieutenant of the *Alfred*, the first naval ship bought by the Continental Congress. In 1776, Jones took command of the *Providence*. Later he received command of a small squadron and was promoted to the rank of captain. Jones took as his flagship the frigate *Ranger*. He was probably the first to fly the new American flag while he was aboard this ship. The *Ranger* was also the first American man-of-war to receive a foreign salute. This occurred in 1778, in Quiberon Bay, France (see FLAG [Famous Firsts for the Stars and Stripes]).

Jones made a cruise in the *Ranger* in 1778. He raided Whitehaven on the Irish Sea coast of England, but did not succeed in burning the ships in the harbor. Shortly afterward, he captured the British sloop *Drake*.

Defeat of the *Serapis*. In 1779, Jones took command of the *Bonhomme Richard* (*Poor Richard*), which he named in honor of Benjamin Franklin. On September 23, his squadron met a large British convoy in the North Sea. The *Bonhomme Richard* attacked the leading ship of the force, the *Serapis*. The *Serapis* was larger and better armed than Jones' ship, so Jones took his vessel alongside the *Serapis*. The ships were so close that their rigging became entangled and the muzzles of their guns touched each other. After three hours of hand-to-hand fighting, the mast of the *Serapis* fell, and the British surrendered. The *Bonhomme Richard* was badly damaged, and sank



Ben Jonson, above, was an English dramatist and literary critic. Jonson and his friends met in taverns to discuss literature, right.



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two days later. Jones went on in another American ship.

Russian Service. After the end of the war, Jones took command of the *America*. A move to promote him to rear admiral was defeated, but he was given a gold medal. The *America* was given to France, and the American navy was abolished. Jones studied naval tactics aboard French vessels for a time, and wrote on naval tactics. In 1787, Empress Catherine of Russia persuaded Jones to serve as rear admiral in the Black Sea fleet, which was then fighting the Turks. Russian officers made Jones' position difficult and his experience a disappointing one. Jones soon decided to leave Russia, and went to Paris in 1789.

Jones was appointed United States commissioner to Algiers in 1792, but died before the appointment reached him in Paris. In 1905, his body was brought back to the United States, where it was buried with honors in the chapel at the United States Naval Academy, Annapolis, Md. In the same year, Jones was nominated for the Hall of Fame, but the nomination was rejected because of his Russian service, and he was not elected to the Hall of Fame until 1925.

RICHARD S. WEST, JR.

JONES, WILLIAM R. See IRON AND STEEL (Famous Men in Iron and Steel).

JONES ACT. See PHILIPPINES (Steps Toward Self-Government).

JONES BEACH. See NEW YORK (State Parks).

JONES-RANDALL LAW. See PROHIBITION (National Action).

JONGLEUR. See MINSTREL; TROUBADOUR.

JONKER. See DIAMOND (Famous Diamonds).

JONQUIL, *JAHNG kwil*, is the name of several yellow narcissuses that came from southern Europe and northern Africa. The best known are the *common* jonquil and the *sweet-scented* jonquil. Jonquils bear from three to six flowers on a stalk about a foot high. The flowers have yellow petals grouped around a yellow tube about an inch long. The leaves spring from the bulb. The name *jonquil* comes from the Latin *juncus*, meaning *rush*. Jonquils are planted in autumn.

Scientific Classification. Jonquils belong to the family *Amaryllidaceae*. The common jonquil is genus *Narcissus*, species *jonquilla*. The sweet-scented jonquil is classified as *N. odoratus*.

MARCUS MAXON

See also DAFFODIL; NARCISSUS.

JONSON, BEN (1573?-1637), was an English dramatist, poet, and critic. He ranks with Shakespeare and Christopher Marlowe as one of the great Elizabethan dramatists. Jonson followed the Greek and Roman classic standards more closely than any other playwright of his time. He fought against the romantic tendency in literature. He was well known for his lyrics, many of which were set to music. One of the most familiar is "Drink to Me Only with Thine Eyes."

Jonson's first important play, *Every Man in His Humour*, was presented in 1598. His best comedies include *Volpone, or the Fox* (1606); *Epicoene* (1609); *The Alchemist* (1610); and *Bartholomew Fair* (1614). The tragedies *Sejanus* (1603) and *Catiline* (1611) show Jonson's skillful handling of blank verse.

Jonson was born in or near London. He joined the army and fought against the Spanish in Flanders. He then became an actor and playwright.

Jonson gained fame as a critic of poetry, drama, and literature, and became the center of a group that met at London taverns to discuss these subjects. The young men of this group, including Robert Herrick and Sir John Suckling, called themselves "the sons of Ben." William Drummond of Hawthornden, in Scotland, recorded some of Jonson's conversations when Jonson visited him. Jonson died in poverty, but was buried with great honor at Westminster Abbey. His tomb bears the inscription, "O rare Ben Jonson!"

LEO HUGHES

JOPLIN, Mo. (pop. 38,958; alt. 1,010 ft.), is a city in southwestern Missouri, located on the edge of the Ozark Mountains (see MISSOURI [map]). Joplin began as a zinc- and lead-mining center, but is now chiefly a trading center for nearby areas of Kansas, Arkansas, Oklahoma, and Missouri. Over 100 products are manufactured in Joplin, and there is a growing agricultural market. The city was founded in 1840.

NOEL P. GIST

JOPLIN, SCOTT (1869-1917), was an American composer and performer of ragtime music. He won fame and success when he published *Maple Leaf Rag* in 1899 (see JAZZ [How Jazz Began]). He published about 40 "rags" for the piano. He also composed the first ragtime opera, *A Guest of Honor* (1903). Another of his operas was *Treemonisha* (1911), dealing with Negro life. Joplin was born in Texarkana, Tex.

GILBERT CHASE

JORAM, or **JEHORAM** (king of Israel). See JEHU.



Philip Gendreau; United Press International

Amman is the Capital of Jordan, and also the largest city in the kingdom. Bedouin soldiers mounted on camels guard Jordan's frontiers.



JORDAN, *JAWR d'n*, is an Arab kingdom in the Middle East area of southwest Asia. This land of sandy desert, rocky plains, and green hills occupies part of ancient Palestine. The name of the country in Arabic, the official language, is **AL-MAMLAKAH AL-URDINIYAH AL-HASHIMIYAH**, or the **HASHEMITE KINGDOM OF JORDAN**. *Hashemite* is the family name of Jordan's kings. Amman is the capital and largest city.

Jordan is a little larger than Indiana, but it has less than one third as many people as that state. Most of Jordan's people live in ancient cities and towns that lie close to the shores of the Dead Sea and the River Jordan. Some of these communities, such as Jerusalem, Hebron, Jericho, and Bethlehem, are famous in Biblical stories. About half the people are farmers. Because of a lack of water, they can raise crops in only about one tenth of their underdeveloped country. About 5 of

every 100 persons are wandering nomads who roam the grazing land with herds of livestock.

When Jordan was founded in the early 1920's, it was called *Transjordan* (beyond the Jordan) because the entire country lay across the River Jordan from Palestine. The government changed the name to Jordan after the Arab-Israel war in the late 1940's.

For the relationship of Jordan to other Asian countries, see **MIDDLE EAST**; **ARAB LEAGUE**; **ASIA**.

The Land and Its Resources

Location and Size. Jordan has an area of 37,291 square miles. It has somewhat the shape of the spread wings of a butterfly. The southern wing touches the Gulf of Aqaba (pronounced *UH kuh bah*), and includes part of the Arabian peninsula. The northern wing stretches along the Syrian border to the border of Iraq, and includes part of the Syrian desert. The *Map* shows that Jordan faces Syria on the north, Iraq on the east, and Saudi Arabia on the southeast and south. Israel borders Jordan on the west. The government of Jordan believes that part of Israel belongs to Jordan.

Land Regions. The country is divided into three main land regions. These are (1) the western uplands, (2) the rift valley, and (3) the eastern uplands.

The Western Uplands, an area about 25 miles wide and 70 miles long, extends westward into ancient Palestine from the River Jordan and the Dead Sea. The uplands rise steeply from the border of Israel to a height of about 3,000 feet in the Judean Hills. Then they drop sharply to the shores of the Dead Sea and the Jordan

FACTS IN BRIEF

Form of Government: Constitutional monarchy.

Capital: Amman.

Head of State: King.

Official Language: Arabic.

Area: 37,291 square miles. *Greatest distance* (north-south and east-west) about 230 miles. *Coast line*, 15 miles.

Population: 1,329,174. *Density*, 35 persons to the square mile. *Distribution*, rural, 55 per cent; urban, 45 per cent.

Chief Products: Barley, fruit, goats, horses, lentils, sheep, vegetables, wheat, wool.

National Flag: Black, white, and green stripes (top to bottom) with a white star on a red triangle at the left. See **FLAG** (color picture, Flags of Asia).

National Anthem: "Al-Salam Al-Malaki" ("The Royal Salute").

National Holiday: Independence Day, May 25.

Money: *Basic unit*, Dinar. For its value in dollars, see **MONEY** (table, Values). See also **DINAR**.

River. The northern half of the western uplands, sometimes called Samaria, is lower, hillier, and has wider valleys and better soil than the southern half.

The *Rift Valley* stretches south from the Sea of Galilee in Israel to the Gulf of Aqaba. *Rift valley* is a geographic name for any deep, long, narrow valley bordered by *faults*, or breaks, in the earth's crust. Most of Jordan's rift valley is about 15 miles wide and is bordered by steep cliffs.

The shallow, muddy River Jordan lies in the northern part of the rift valley. This river rises in Syria and Lebanon, flows south through the Sea of Galilee, and empties into the Dead Sea. The Dead Sea, which is really a large lake, is the lowest point on the earth's surface. It lies 1,292 feet below sea level.

The *Eastern Uplands* rise steeply from the rift valley to heights of more than 5,000 feet. Then they slope gently eastward to the Syrian Desert. This desert crosses the eastern part of Jordan. The barren, rocky eastern uplands cover more than three fourths of Jordan. The country's highest point, 5,755-foot Jebel Ram Mountain, stands in the southwestern corner of the eastern uplands, near the Gulf of Aqaba.

Natural Resources. The soil is Jordan's chief natural resource. Large deposits of bromine and potash lie in the Dead Sea, and there are deposits of phosphates and manganese in the southern part of the country. Jordan also has deposits of limestone and marble.

Climate. Jordan has warm summers and cool winters. Average temperatures in Jerusalem vary from 45°F. in January to 76°F. in July. Temperatures sometimes soar as high as 120°F. in the rift valley.

Most of Jordan's rain falls during the winter months. An average of about 25 inches of rain falls on the western uplands every year. The section of the eastern uplands along the rift valley averages about 16 inches of rain annually. Parts of the country have as little as four inches of rain. Snow often falls on the mountains in winter, but it melts quickly.

Life of the People

The People and Their Language. Jordan has a population of 1,329,174. An average of 35 persons live on every square mile. About 55 per cent live in farm regions and about 45 per cent make their homes in city areas. Most of the people are Arabs. Some who live in the western uplands trace their ancestry to a mixture of the Arabs and other ancient peoples who once lived in Palestine. About 10,000 people in Jordan are descendants of the Circassians who came to the area from the Caucasus Mountains more than 100 years ago (see *CIRCASSIAN*). Almost all the people speak Arabic.

In addition to these permanent residents, Jordan has about 500,000 Arab refugees who fled from what is now Israel during the Arab-Israel war in 1948. Most of these refugees live in camps operated by the United Nations.

Cities. Many of Jordan's cities were founded in ancient times, and are mentioned in various parts of the Bible. Amman, the largest, has a population of 108,304. The Jordan section of Jerusalem, the nation's second largest city, has a population of 46,713. The next largest cities are Nābulus (pop. 42,499), Jericho (pop. 41,593), Hebron (35,983), Irbid (23,157), Tūl Karm (21,872), Bethlehem (19,155), Rām Allāh (pop. 17,145), and As Salt (pop. 15,478).



Family Life in Jordan is similar to that in most Arab countries. About 90 of every 100 persons in Jordan are Moslems (see *ISLAM*). Islamic law allows a man to have as many as four wives. However, few have more than one wife. Women gained more political and social freedom in the 1950's. But, in many families, the women still live in one section of the house and the men in another.

Most of the people are poor and have little furniture. They sit cross-legged on the floor while eating their meals from earthenware bowls placed on a cloth. The family sleeps on mats spread out on the bedroom floor. For a description of the life of the nomads, see *ARAB*.

Shelter. The people in the cities, towns, and villages usually live in small, flat-roofed houses made of gray mud-brick. Some of the poorer people make their homes in thatched cottages. The chief cities have large modern houses and apartment buildings similar to those in the United States and Canada. Only about 4 of every 100 homes have electricity. The nomads live in tents woven of goat's hair or wool. They carry the tents with them when they move from place to place.

Food. Rice, wheat, lamb, vegetables, and *leban* (soured sheep's, cow's, or goat's milk) are the main foods in Jordan. A favorite dish is *kebab*, or meat roasted on a skewer.

Clothing. Most people in the cities and towns wear clothing similar to that worn in Western countries. The farmers' clothing usually consists of cloaks and long gray shirts that reach to their ankles. The nomads wear loose-flowing black or white robes. Some men in Jordan cover their heads with *kaffiyehs*, or cloths, instead of hats. The *kaffiyeh* is held in place by cords of woven



Arab Information Center

Ruins of Petra lie in the desert in southwestern Jordan. Most of the buildings, built after establishment of Roman rule in A.D. 106, are rock-cut fronts of tombs that look like temples.

wool wrapped around the head. Some women wear long, one-piece dresses covered by black cloaks.

Work of the People

About 45 of every 100 persons in Jordan make their living from agriculture. The rest work as merchants, craftsmen, or laborers. Most of the refugees from Israel have been unable to find work because of the country's lack of farm land and industry. The United Nations provides them with food, clothing, and shelter.

Agriculture. Most of the farms lie in the western uplands or near the western edge of the eastern uplands. Some of Jordan's farmers still use primitive tools and methods, but the government has introduced modern farm machinery.

The lack of water is Jordan's chief agricultural problem. Only about one tenth of the land can be farmed. The farmers cultivate only part of their land at a time. They let the rest lie idle for two or three years so it can soak up the small amount of rain that falls.

Wheat and barley are Jordan's leading farm products. Farmers also grow lentils, beans, and peas. They usually plant these crops in the fall and harvest them in the spring in order to take advantage of the winter rains.

Olives, grapes, and other fruits that require little water are also important agricultural products. The farmers and wandering herdsmen raise sheep, goats, and other livestock. They also raise fine Arab horses.

Mining, Manufacturing, and Processing. Jordan has little mineral production or large-scale manufacturing. The government has formed small companies that work the phosphate deposits near Amman and Aqaba. Workers quarry marble near Amman, Nabulus, and Hebron. Manufactured and processed products include flour, soap, cigarettes, cement, and olive oil.

Trade. Jordan's few exports include wheat, barley, potash, fruits, vegetables, phosphates, marble, and handicraft articles. Imports include sugar, clothing, food, fuels, chemicals, and machinery. Great Britain, Syria, and Lebanon are Jordan's leading customers and chief sources of imports.

Transportation and Communication. Several international and local airlines serve Jordan. The only railroad is the government-owned line that runs between the Syrian border and the city of Ma'an in southern Jordan. Trucks, buses, and a few automobiles travel over Jordan's 550 miles of paved roads and 1,650 miles of improved dry-weather roads. A few shipping lines serve the country through the port of Aqaba on the Gulf of Aqaba.

Jordan has four main daily newspapers. Two are published in the Jordan section of Jerusalem and the other two in Amman. The country also has several weekly newspapers and a few book publishers. Radio stations broadcast from Amman and Ram Allah.

Activities of the People

Education is free in Jordan. The law requires all children to attend elementary school. The ages of required attendance depend on the size of the available schools. Because of a shortage of classrooms and teachers, many children, especially girls in farm areas, do not go to school. About one fourth of the people cannot read and write. Jordan has some high schools, and several schools operated by Protestant, Roman Catholic, and Greek Orthodox groups.

The Arts. Skilled craftsmen make fine jewelry and other objects of gold, silver, and copper. They are also known for pottery, glassware, and embroidery.

What to See and Do in Jordan

Jordan's ancient cities, such as Jerusalem, Hebron, Bethlehem, and Jericho are mentioned in the Old and New Testaments of the Bible. Thousands of visitors come to these cities every year to see the Moslem, Christian, and Jewish holy places and religious shrines. These include the Church of the Holy Sepulchre (Christian), the Wailing Wall (Jewish), and the Mosque of Omar (Moslem), all in Jerusalem. Most of the Christians visit Jerusalem and Bethlehem during the Easter and Christmas seasons.

The Jordan River flows into the Dead Sea, the lowest point on the earth's surface, in western Jordan. The ruins of the ancient city of Petra lie in the rocky hills of southern Jordan (see PETRA).

Government

Like Great Britain, Jordan is a constitutional monarchy. Jordan's constitution, adopted in 1952, gives

most of the country's political power to the prime minister, who heads the cabinet (see CABINET). The king has the power to veto laws passed by the National Assembly, but this legislative body can override his veto. The courts interpret the laws of the country. The king appoints the governors of the eight *liwas* (districts), the chief units of local government.

The National Assembly has two houses, the Council of Notables and the Council of Representatives. The king appoints the 29 members of the Council of Notables for 4-year terms. Their number cannot exceed one half the number of representatives. The people elect the 58 members of the Council of Representatives from districts by direct popular vote. The members serve four-year terms.

All men over the age of 18 may vote in national elections. Women cannot vote in Jordan. The major political parties include the National Socialist and the Socialist Resurrection.

The Ministry of Justice supervises the courts and appoints the judges. The courts of appeal in Jerusalem and Amman are the highest courts in the country. There are lower courts in the towns and villages. *Sharia*, or religious courts, handle all cases dealing with Moslem religious matters.

Jordan's army is the famous Arab Legion. In addition to its military duties, the army assists the country's police. Jordan has a small air force and navy.

History

Early Days. Scientists believe that people have lived in what is now Jordan since the Stone Age began about 1,000,000 B.C. In ancient days, the eastern uplands were a great highway for camel caravans and armies. At various times, local kingdoms flourished in the area. The greatest of these was the kingdom of the Nabataeans, who ruled from their capital in Petra between the 300's B.C. and the A.D. 100's. The Nabataeans controlled the trade between Arabia and Syria, and at one time ruled Damascus, the capital of Syria. The Romans conquered Petra in A.D. 106. Since then, only wandering tribesmen have lived in most of the eastern uplands.

The rift valley and western uplands were part of ancient Palestine. For the history of this area from Biblical days to the early 1900's, see PALESTINE.

British Mandate. The British and Arab troops seized Palestine from the Turks during World War I. In 1920, the League of Nations gave Great Britain a *mandate*, or control, over what is now Israel and Jordan.

The following year, the British made Abdullah ibn Hussein *emir*, or ruler, of the eastern uplands of present-day Jordan. Emir Abdullah was a member of the Hashimite family of Arab leaders. The area he ruled, under British protection, was called *Transjordan*. The British formed the Arab Legion to defend Transjordan. Its enlisted men were Arabs from Transjordan's desert tribes, but most of its high-ranking officers were from the British Army.

The League of Nations recognized Transjordan as a separate country in 1923. However, the League allowed Great Britain to keep its mandate, because it felt that Transjordan was not ready for self-government.

During the next 20 years, Transjordan gradually became independent of British control. By the early 1940's, only a few British advisers remained in the

government, although British officers still led the Arab Legion. Transjordan remained neutral during World War II.

Independence. Great Britain and Transjordan signed a treaty in 1946 that recognized the complete independence of the Arab country. In May, 1946, Transjordan's National Assembly proclaimed Emir Abdullah the first king of the country.

On May 14, 1948, the British ended their mandate over the section of Palestine that lay west of Transjordan. The Jews founded the new state of Israel in part of the area. On that same day, Transjordan's army, and armies from the Arab League countries of Syria, Egypt, Lebanon, and Iraq, entered Palestine to help its Moslem residents (see ARAB LEAGUE). They fought against an army that the Israelis had built up under the British mandate. The Arab League countries felt that all Palestine should be under Arab, rather than Israeli, rule. Mediation by the United Nations ended the fighting in January, 1949. That year, the government changed the country's name to *Jordan*.

During the Arab-Israel war, about 500,000 Arab refugees fled into Jordan from Israel. These refugees increased Jordan's population by almost one third. One of the country's major economic problems has been feeding, housing, and finding work for these refugees.

Recent Developments. On July 20, 1951, an assassin killed King Abdullah during religious services in Jerusalem. King Abdullah's son, Talal I (1911-), became king. But King Talal was unable to rule the country because of mental illness. The National Assembly deposed Talal I, and in 1952 made his son Hussein I, king. The country adopted a new, more democratic constitution in that same year.

Jordan suffered great political and economic difficulties in the 1950's. Frequent fighting broke out between Israel and Jordan. The refugee problem remained unsettled. Jordan received some economic aid from the United Nations, the United States, and Great Britain, but the country remained poor. Jordan became a member of the United Nations in 1955.

Frequent anti-British rioting broke out during the 1950's because the people wanted to end all British influence in Jordan's internal affairs. In 1956, King Hussein ousted General John Bagot Glubb (1897-) as head of Jordan's army. In 1957, Jordan canceled its 1948 defense treaty with Great Britain, and the British withdrew their military units. In 1958, Jordan joined with Iraq to form the Arab Federation or Arab Federal State. They united to counteract the influence in the Middle East of the United Arab Republic set up by Egypt and Syria earlier that year. The alliance ended a few months later when nationalists overthrew the government of Iraq. In May, 1959, the Jordanian government successfully suppressed a conspiracy to overthrow King Hussein.

J. ALLEN TOWER

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Dead Sea	Jerusalem	Samaria

JORDAN, DAVID STARR

JORDAN, DAVID STARR (1851-1931), was an American naturalist, educator, and worker for world peace. After teaching in Illinois, Wisconsin, and Indiana, he became president of Indiana University in 1885. He became Stanford University's first president in 1891, and built the school into an important institution. After he retired in 1916, he devoted full time to his peace efforts and nature studies. He was born at Gainesville, N.Y., and was graduated from Cornell University with a master's degree in 1872.

CLAUDE A. EGGERTSEN

JORDAN, RIVER, the only important river of Israel and Jordan, rises in springs on the slopes of Mount Hermon. Then it falls sharply to Lake Huleh, and for 100 miles flows on a course below sea level. The river winds in and out for 200 miles through a deep valley the Arabs call the *Ghor*. Finally, the Jordan empties into the Dead Sea, 1,286 feet below the level of the Mediterranean.

In the 10 miles from Lake Huleh to the Sea of Galilee, the river falls 689 feet. Many rapids and whirlpools make navigation impossible. Along much of the rest of its zigzag journey, the water is not more than about five feet deep, except during the flood season in March. Then the melting snow from Mount Hermon often floods the little river valley, which is from a half mile to two miles wide and lies in the center of the larger valley.

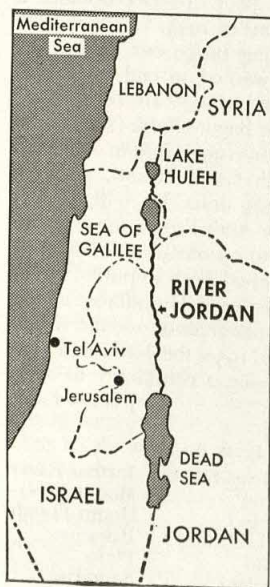
The Bible says Joshua led the Children of Israel over the River Jordan into the Promised Land (Josh. 3:1-17). Christ was baptized in its waters by John the Baptist.

The southern half of the river is in Jordan. The northern section forms part of the border between Israel and Jordan and Israel and Syria. The waters of the Jordan are used for irrigation and to produce electric power. There is a hydroelectric power plant at Naharayim in Jordan.

CHRISTINA PHELPS HARRIS

See also DEAD SEA.

The Historic River Jordan rises on Mount Hermon, plunges below sea level, and flows southward into the Dead Sea. An Arab, right, pauses to water his horse in the Jordan near its



Culver

Joseph works at his carpenter's table in this painting, *Holy Family*, by the Italian artist, Annibale Carracci.

JOSELITO. See BULLFIGHTING (The Matador).

JOSEPH was the husband of Mary, who was the mother of Jesus. He was a carpenter of Nazareth. A census decreed by Emperor Augustus required all the descendants of David to go to Bethlehem to have their names listed. For this reason, Joseph and Mary were in Bethlehem when Jesus was born. Jesus was still a baby when Joseph dreamed that Herod, the king of Judea, wanted to kill the child. Joseph fled to Egypt with his family. Herod soon died, and Joseph and his family returned to Nazareth. He and Mary went to Jerusalem each year to attend the Feast of the Passover. They took Jesus with them on one of these journeys, when He was 12. Little is known of Joseph from this time on. It is believed that he had died by the time Jesus began to preach. At the Crucifixion, Jesus asked John to take care of His mother. This seems to show that Joseph was already dead. Joseph is venerated as a saint in the Roman Catholic Church.

FREDERICK C. GRANT and FULTON J. SHEEN

See also HEROD; PASSOVER; VIRGIN MARY.

source. It was in the valley of the Jordan that the Christian religion began. The Sea of Galilee, through which the Jordan flows, was the scene of many Biblical events.



Keystone



Brown Bros.

Young Joseph Was Sold into Slavery by his jealous brothers. A band of Ishmaelites traveling to Egypt bought him.

JOSEPH was the Hebrew boy who was sold into Egypt by his brothers and became the great prime minister of Pharaoh. The story of Joseph is one of the most interesting dramas of all time. It is powerfully told in the book of Genesis in the Bible.

Joseph was the 11th of the 12 sons of Jacob. Jacob was 90 years old when Joseph was born. To the aged father, this son was his dearest child.

Joseph helped his older brothers tend the flocks in the fields. One day, when he was 17, he appeared among them in a coat with long sleeves. It was the gift of his father. Peasants or herdsmen could not wear such a cloak, because its long sleeves would get in the way. So the cloak showed that Joseph was intended for some better occupation. The older brothers were jealous that Joseph should be honored above them.

Their jealousy became hatred when Joseph told them about two dreams he had. The dreams were visions of his future power as a great ruler, although he did not know what they really meant. He said he dreamed that he was binding wheat in a field with his brothers. Suddenly his sheaf stood upright while the sheaves of his brothers gathered round and bowed down to it. In his second dream, the sun, moon, and 11 stars bowed down to him.

One day, when the brothers saw Joseph coming, one of them said, "Behold, this dreamer cometh. Let us slay him." But they agreed to put him in a deep pit without harming him, after taking his beautiful coat.

Later, as they were eating, a band of Ishmaelites suddenly appeared. Their camels were laden with spices and precious things which they were carrying from Gilead into Egypt. Judah and some of the other brothers drew Joseph out of the pit. Then, due to jealousy, they sold him to the Ishmaelites for 20 pieces of silver. The brothers then killed a goat, tore the coat, stained it with the goat's blood, and took it to Jacob. They told him that a wild beast had destroyed Joseph.

A Slave in Egypt. The band of Ishmaelites carried Joseph to Egypt. There Potiphar, the captain of Pharaoh's guard, bought him. Joseph served his master so faithfully that he became overseer of the household. But he offended Potiphar's wicked wife, because he would not return her love for him. She accused him falsely and had him put into prison. But Joseph soon won the jailer's confidence, and was placed in charge of all the prisoners.

Pharaoh's chief butler and baker offended their lord,

so they were also put in prison. One night they both had strange dreams. Joseph interpreted the dreams correctly for them. The butler, he said, would be free in three days, but the baker would be hanged at the same time. Before the butler left the prison, Joseph asked him to try to obtain his pardon. But the butler forgot Joseph.

Two years later, Pharaoh had two very strange dreams which no one could understand. Then the butler remembered Joseph. Pharaoh sent for Joseph to come and interpret his dreams. Pharaoh's first dream was that seven fat cows were grazing in the reeds near the river. Seven lean cows came and devoured the fat cows. The second dream was that seven good ears of grain sprang up, but seven thin ones ate them. Joseph said the two dreams meant that there would be seven years of plenty in Egypt, followed by seven years of famine. He advised Pharaoh to choose a wise man to gather in the extra food during times of plenty to eat when famine came.

The Prime Minister. Pharaoh was so pleased with Joseph's wisdom that he chose him to oversee the grain storing of all Egypt. For seven years, there were abundant crops. Then came the famine. No grain had been saved in Canaan. Jacob and his family soon needed food. The 10 oldest sons went into Egypt to buy food. They did not recognize Joseph as their brother when they were brought before him because 20 years had passed since they sold him into slavery. But Joseph knew them because the older ones had changed very little. He pretended to think that they were spies and asked them about their home. They said they had another brother, Benjamin. Joseph told them to go get him to prove they spoke the truth. As the brothers left, he ordered their bags to be filled with grain. The money which they paid him was hidden in the bags. Joseph kept one brother, Simeon, as a hostage.

The old father, Jacob, at first refused to let Benjamin go with the brothers. But after all the food was eaten, he consented. When Joseph saw Benjamin, he longed to embrace him and weep for joy. Benjamin was his own brother, the son of Rachel, Joseph's mother, while the others were all half-brothers. But Joseph tested their character before he told them who he was. He found that they were thoughtful of their father and Benjamin. Then, in a deeply emotional scene, Joseph made himself known to them.

The brothers were ashamed to look at Joseph, but he forgave them for their wickedness. After their happy reunion, he told them to bring their father and families to Egypt, where they would have plenty of food.

Settling His Family in Egypt. At first Jacob could not believe that his son Joseph still lived and was a great ruler in Egypt. But when he saw the wagons sent to carry his family into the new land, he said, "It is enough. Joseph my son is yet alive; I will go and see him before I die." So all his children and grandchildren, and even great-grandchildren, loaded their things into the wagons and journeyed to the land of Goshen, where Joseph met them.

Joseph had two sons, Ephraim and Manasseh, who became the fathers of the two tribes that bore their names. Jacob's descendants lived in Egypt until Moses led them out many years later.

MERRILL F. UNGER

See also BENJAMIN; JACOB; MOSES; PHARAOH.



Culver

Chief Joseph Led the Powerful Nez Percé Indians.

JOSEPH, CHIEF (1840?-1904), a Nez Percé Indian chief, became best known for his military retreat of 1877 through Idaho, Washington, and Montana. In June, 1877, negotiations had failed between Joseph's tribe and United States military officials in a conflict over some Nez Percé territory. Joseph realized that his warriors could not face the U.S. forces, and ordered the retreat. He conducted it brilliantly, fighting off U.S. troops and leading his people more than a thousand miles. But he was finally forced to surrender about 50 miles from the Canadian border. See **INDIAN WARS** (The Nez Percé War).

As a youth, Joseph learned much of military tactics from watching U.S. soldiers at drill. He studied in a mission school, and became familiar with the white man's ways. After his famous retreat, he lived at the Colville (Wash.) Indian Reservation. **WILLIAM H. GILBERT**

JOSEPH OF ARIMATHEA, *AR ih muh THE uh*, was a Jew who went boldly to Pilate after the Crucifixion and asked for the body of Jesus. He wished to lay it in his own new tomb, which had been cut out of the rock (Matthew 27: 60). Joseph is described as a rich counselor. Perhaps he was a member of the *Sanhedrin*, the high council of the Jews.

He was a secret follower of Jesus. He did not vote to put Jesus to death, but, before the Crucifixion, he was afraid to profess himself a disciple of Jesus. There is a legend that Joseph kept the cup that Jesus used at the Last Supper and carried it to England (see **HOLY GRAIL**).

FREDERICK C. GRANT and FULTON J. SHEEN

JOSEPHINE (1763-1814) was the beloved wife of Napoleon Bonaparte, one of French history's most important figures. She was the daughter of a French planter in Martinique, in the West Indies. She married Viscount Alexandre de Beauharnais when she was 17. They had a son, Eugène, and a daughter, Hortense. The viscount was one of the last victims of the Reign of Terror of the French Revolution. Josephine was also in prison for a time, and narrowly escaped being guillotined herself.

But she soon became friendly with Viscount Paul Barras, one of the leaders of the government at the time. Through his influence, she got back some of her husband's property, and she became a leader in the fashion-

able society of Paris. It was at Barras' home that Josephine met Napoleon. He immediately fell in love with her, and they were married in 1796.

Her Marriage. Josephine was a beautiful woman, and her marriage with Napoleon naturally made her a subject of gossip. It was often reported that she had love affairs with other men while Napoleon was absent from Paris during his military campaigns. Such reports frequently reached Napoleon and made him angry. There are also many stories about her influence over her husband, but the truth of most of them is hard to prove.

Undoubtedly Napoleon found much joy and relaxation in her companionship. She was an intelligent woman, and may have given him considerable advice. It is certain that she was graceful and stately in her public appearances, which made her an asset to Napoleon in his climb to power. When Napoleon was crowned emperor, Josephine came down from her throne to

kneel at the altar before her husband. He took her small crown in his hands and placed it on her head. He lifted it off once or twice in a playful manner, as if to tell her that she should wear it lightly.

Napoleon and Josephine had no children. By 1809, Napoleon was afraid that he might die without a son, and that his empire would crumble. He finally decided he would have to divorce Josephine. One night after



Visual Education Service

Josephine

dinner he told her of his decision, as gently as he could. They said their last goodbyes. The empress begged her husband not to forget her. She promised to care for her health, and never to doubt his love. She retired with imperial honors to Malmaison, the small estate near Paris which Napoleon had bought for her.

Her Last Years. Napoleon married Marie Louise of Austria in 1810. A year later, a son was born to them (see **MARIE LOUISE**; **NAPOLEON II**). Josephine heard the cannon shots announcing the birth, and called her household together. She said, "We, too, must rejoice. I will give you a ball, and the whole city will be glad with us." Soon after, Napoleon brought his son to Malmaison without Marie Louise's knowledge. Josephine had begged to see him.

Marie Louise was not allowed to go with Napoleon to exile at Elba. Josephine wrote a letter to Napoleon, and asked permission to join him. He was forced to write back that it was impossible. But before his letter arrived, Josephine had died.

VERNON J. PURYEAR

See also **NAPOLEON I**.

JOSEPHUS, *joh SEE fus*, **FLAVIUS** (A.D. 37-100?), a Jewish historian, wrote *Jewish Antiquities*, a 20-volume history of the Jews from their beginnings to the close of Nero's reign. Josephus, born Joseph ben Matthias in Jerusalem, was of royal and priestly descent. He was governor of Galilee when war broke out between the Jews and the Romans in A.D. 66. The Roman army defeated him, and held him a semi-prisoner for three years. After Jerusalem fell in A.D. 70, Josephus went to Rome.

THOMAS A. BRADY



Brown Bros.

JOSHUA commanded the sun to stand still so that the Israelite armies could win an important battle while conquering Palestine.



Brown Bros.

King Josiah used a book of law, found while the Temple was being repaired, as a guide for religious reform during his reign.

JOSHUA, a lieutenant of Moses, led Israel in the conquest of Palestine after Moses' death. His story is told in the Old Testament book that bears his name. It says that the conquest of Palestine was swift, ruthless, and complete. The Israelite army crossed the River Jordan when its waters were dammed, and besieged Jericho. The walls of Jericho fell flat at the blast of the Israelites' trumpets. Three lightning-fast campaigns then placed all Palestine in Israel's hands. The army killed the inhabitants and divided the land among the 12 tribes of Israel. As the climax of his career, Joshua later united all Israel in a solemn covenant with God. The Book of Judges says the conquest was slower and less complete. Archaeological evidence shows it took place in the 1200's B.C.

JOHN BRIGHT

JOSHUA TREE NATIONAL MONUMENT is in southern California near Hesperia. It contains interesting desert plant life, including rare Joshua trees. Legends tell that early Mormon pioneers named them after the Biblical character. The 557,934-acre monument was established in 1936.

C. LANGDON WHITE

JOSIAH, *joh SY ah*, was one of the last and most unselfish rulers of Judah. He ruled from about 639 B.C. to 608 B.C. Josiah came to the throne at the age of eight, when his father, Amon, was killed. After 18 years, a book of law was found while the Temple was being repaired. Josiah, supported by the prophet Jeremiah, used this book as his guide in carrying out religious reform. The main part of the Book of Deuteronomy may have come from this book.

During Josiah's rule, the sprawling Assyrian empire was collapsing. In 625 B.C., Babylonia broke away and established its freedom. Assyria soon became too weak to demand tribute from its many provinces. Under Josiah's rule, Judah also claimed its independence.

An allied army of Babylonians and Medes captured Nineveh, the Assyrian capital, in 612 B.C. Pharaoh Necho of Egypt then led his army into Palestine and Syria in 608 B.C. He met Josiah at Megiddo. Necho did not like what Josiah said about his aggression, and he had Josiah put to death.

E. A. SPEISER

JOTHAM, in the Bible, was the youngest son of Gideon. All his brothers were killed by Abimelech, a half brother of Jotham and a Philistine king. His story is told in Judges 9: 5-21.

JOUETT, "JACK," JOHN. See VIRGINIA (Famous Virginians).

JOUHAUX, *zhoo OH*, **LÉON** (1879-1954), a French socialist, trade-union leader, and worker for international cooperation, won the 1951 Nobel Peace prize. He served in the International Labor Organization and as French delegate to the League of Nations. He was imprisoned in Germany from 1941 to 1945. Jouhaux was later a French delegate to the United Nations. He was born in Paris.

E. J. KNAPTON

JOULE, *jool*, is a unit of energy used to measure the amount of work done. It is named in honor of the British scientist James P. Joule. One joule of energy equals 10,000,000 *ergs*, or about .74 *foot-pound*. It is equal to the energy needed to send an electric current of one ampere through a circuit of one ohm resistance. The use of one joule in one second is equal to one *watt*.

In 1894, an act of Congress made the joule a legal unit of measure. The joule is too small an amount of energy for commercial measurement, and kilowatt-hours are used instead.

JOHN W. RENNER

See also DYNE; JOULE, JAMES PRESCOTT; WATT.

JOULE, *jool*, **JAMES PRESCOTT** (1818-1889), a British physicist, shared in discovering the law of the conservation of energy. Two German physicists, Hermann Helmholtz and Julius von Mayer, and the British physicist, Lord Kelvin, also worked on the law. The law states that energy used up in one form reappears in another and is never lost.

Joule stated a law, now called *Joule's Law*, in 1840, that heat is produced in an electrical conductor (see HEAT [How Heat Is Created]). The unit of work or energy, the *joule*, is named in his honor. He is credited with doing more than any other man to establish the idea that heat is a form of energy. He was born at Salford, England.

R. T. ELLICKSON

JOURNAL. See BOOKKEEPING (The Journal); DIARY.

JOURNALISM

Reporters and Camera-men record a Presidential news conference held by President Eisenhower. They report the information given by the President in stories printed in their newspapers and magazines or broadcast by radio and television stations.



Wide World

JOURNALISM. Great statesmen argue international issues. A scientist discovers a new element. A small child is killed in a traffic accident. None of these events gets by the journalist. Journalism is the profession of recording such events as may be of interest to the public.

Almost all the world will be interested in the doings of the statesmen and the scientist. Probably only the people of one community will be interested in the death of the child. Journalism is, therefore, both world-wide in scope and as limited as the territory covered by the smallest country weekly newspaper.

Modern journalism uses every means of communication to report the news of the world to newspapers, magazines, and the news rooms of radio and television networks. News services maintain correspondents in all parts of the world, and receive news from them by radio, underseas cable, telegraph, and transoceanic telephone. Large newspapers have their own foreign correspondents, and keep up news bureaus in the principal cities of the nation. Almost every daily newspaper keeps a staff of reporters assigned to watch for news of various aspects of community life.

The men and women who are engaged in this tremendous newsgathering task rarely call themselves journalists. They think of themselves as newspapermen and newspaperwomen, or as magazine writers or editors. Newspapermen have an especial scorn for the term *journalist*. They love to quote an old saying that "a journalist is a newspaper man with a cane." Yet most of them accept the term journalism for their profession, of which they are very proud, in spite of its often demanding requirements in time and labor.

Journalism, especially in modern times, is not a leisurely profession. The tasks of most journalists are tense, sometimes exciting, but more often made up of long hours of hard physical and mental labor.

Journalism was hardly a profession until 1760. Up to that time, news pamphlets of the day contained little more than news of wars and of royal courts. They were written and published mainly by printers whose own beliefs frequently slanted the contents. But be-

tween 1760 and 1770, freedom of speech became the privilege of most English-speaking countries, and newspapers and journals became more independent. This move toward a free press was aided by the Revolutionary War in America, the French Revolution, and the fight for freedom of the press waged in England by John Wilkes and Henry Woodfall. When the London *Times* sent correspondents to the European continent to report the Napoleonic Wars, it marked the first time that a war was reported directly to the people by persons not concerned with the fighting.

In the United States during the 1800's great individual leaders arose in the field of journalism. These were famous molders of public opinion such as Horace Greeley, Charles A. Dana, and William Cullen Bryant, James Gordon Bennett, and Joseph Pulitzer. In this period the founding of the "penny press" made newspapers available to the common man, and information came into the public domain.

During the 1900's, the progress of journalism was steady both mechanically and professionally. Educational requirements for journalists were raised, and such inventions as the high-speed press, the automatic teletype, and similar devices helped the journalist to transmit news more speedily and freely.

Journalists at Work

The Newspaper branch of the journalistic profession is probably the most exciting and adventuresome of all. Because of this, it attracts most young persons who wish to become journalists. Newspaper workers have the satisfaction of seeing their work in print either the same day it is written or the day following. The work of most newspaper writers throws them in contact with humanity in all its forms. Those who gather and prepare the news, either as reporters or special writers, meet many kinds of people. A reporter may have consultations with the mayor of his city, a special writer may interview the famous author he has always admired, and a foreign correspondent may talk to a king. This direct contact with the powerful and the famous persons of the world

offers a fascination which leads many newspaper workers to value their profession above any other, even though they work long and unusual hours, under conditions that are sometimes very trying.

The *reporter* is the person who gathers the news at its source. Reporters are the "shock troops" of a newspaper or news service. They go to the spot where the news is happening and assemble the facts for the news story. This is not so easy as it may sound. Any newspaper editor knows that an apprentice, or *cub reporter*, is not likely to come back with the facts and details that a well-trained and experienced reporter would. News stories are often likely to be uncomplimentary to the person involved. The reporter, therefore, must be a good psychologist. He must be able to get people to talk about things they do not want to talk about.

Like all newspapermen, the reporter must have what is called a "nose for news." There are classic stories within the profession about the lack of this faculty, and newspapermen like to tell about them after working hours. One is the story of the cub reporter sent to cover a public meeting. He returned to inform his editor there was "no story" because the meeting hall had burned down and the speaker and several persons in the audience were injured. This, of course, would have been a better story than the proposed meeting.

Getting the facts accurately is another important requirement of a good reporter. Mistakes in fact, or misquoting what persons have told him, can not only be embarrassing to his paper, but also may result in an expensive lawsuit if his error has violated the libel laws.

Many good reporters, especially on large newspapers, do not possess any great writing ability. They are known as "leg men," and are valuable to their paper because of their skill and ingenuity in digging up facts in difficult situations. These facts are then telephoned to the newspaper. For the most part, however, the young reporter who wishes to succeed will develop an ability to write clearly, concisely, and in an entertaining and colorful manner. This will enable him to take the next step upward in his profession, and become either a rewrite man or a special writer.

The *rewrite man* is more highly paid than most reporters. This is because he must be able to write well, accurately, and at high speed. He may often have only a few minutes in which to turn out an important story before his paper goes on the presses. The rewrite man rarely leaves the office, except for an occasional out-of-town assignment. Most of his work involves taking stories from reporters by telephone, and writing them. He must be able to analyze the facts he has been told, and ask the reporter to supply any missing details. If he fails to do so before he loses contact with the reporter, he may not be able to obtain them later. Rewrite men must know a great deal about their city, for they are often called upon to get a story by telephone.

The rewrite man must also be able to take publicity material which the newspaper wishes to publish and rewrite it in such a fashion as to be entertaining as well as informative. Often such publicity "handouts" contain information which in its original form would not be likely to be read because it is written in such a dull fashion. The rewrite man will be asked by his editor to "breathe some life into this." He will then interpret the facts in such a way that the interesting facts and the

human elements of the story are brought out clearly.

On a straight news story, called *spot news*, the rewrite man follows certain fundamental principles of all good newspaper writing. He is careful to see that his story answers these five questions: "Who?" "What?" "Where?" "When?" and "Why?" For example, these questions are answered in the following typical news story:

John Jones, 55 years old, of 115 West 58th Street, (*who*) died (*what*) late yesterday (*when*) after he slipped on ice, fell, and struck his head against the curb (*why*) at the corner of Spruce and Pine streets (*where*).

The rewrite man organizes his story carefully so that the important facts come in the first paragraph, called the *lead*. The rule on most newspapers is to "tell the story in the first paragraph."

The rest of the facts are set down by the rewrite man in the order of their importance, so that the story can be reduced in length, or cut, from the bottom, if space requires, without losing the most essential facts.

The *feature writer* need not follow these fundamental rules for the spot news story. Feature writers are usually newspapermen with an exceptional ability for colorful writing. They may be assigned to interview persons with unusual hobbies, write an amusing story about the birth of a hippopotamus at the city zoo, or tell the history of some old building landmark of the city which is being torn down. All of these are examples of feature

Newsreel Cameramen add to journalism by recording events in motion pictures that also are recorded in writing.

Monahan, F. P. C.



JOURNALISM

stories, and the feature writer writes them in his own way. He may even save the most important fact for the last part as a "surprise ending," since it is assumed that his story will be interesting enough for the average reader to follow it straight through. Such stories are often written by *general assignment reporters*, who may also be called upon to cover spot news stories. Feature stories often carry the name, or *by-line*, of the writer.

The *copyreader* is one of the most important persons on a newspaper. To most people who visit a newspaper plant, the solemn-faced men who sit around a great horseshoe-shaped desk and work over copy with busy pencils are not romantic figures. Yet most of these copyreaders would not willingly trade places with any of the reporters or feature writers. The grist of the day's news passes through their hands to be checked for errors in fact, grammar, spelling, punctuation, and the style of the particular newspaper. Often they are asked to trim stories to fit space requirements, a task that requires skill in order to retain all the essential facts of the story in fewer words. After they have given the story its final polish, the copyreader writes a headline for the article. The headline must tell the story as dramatically as possible, but should not depart from the facts. CITY'S LARGEST FACTORY EXPLODES is not a truthful headline when the facts are that a minor explosion has occurred in a small storage building on the factory's grounds. Such headline writing is not only a violation of news ethics, but also serves to annoy the reader when he buys a paper on the strength of the exaggerated headline.

Special Assignments on the larger newspapers often bring higher pay to the journalist, although they also require special training or ability.

The *editorial writer* prepares editorials that reflect the opinions of his newspaper. See EDITORIAL.

The *political writer*, or *political editor*, covers the political affairs of the community, and analyzes elections both before and after they are held.

The *foreign correspondent* is one of the most glamorous figures in the newspaper profession. He travels over the world, wherever foreign news is most prominent, and reports to his paper by cable or radio. In wartime, his

Foreign Correspondents gather news in all parts of the world. Their work often is dangerous. The correspondents interviewing this injured soldier covered the Korean War.



Wide World

job often is dangerous. See WAR CORRESPONDENT.

The *columnist* is a special writer who is assigned a certain space in the paper, sometimes daily and sometimes only two or three times a week. Most columnists have their specialty. Some are humorists, some discuss current events, some are the "gossip" columnists who discuss personalities and events in their community. Columnists whose writing appears in hundreds of newspapers throughout the nation are the most highly paid journalists in the profession. Often they earn much more than their editors.

The *drama, music, and motion-picture critics*, or *reviewers*, judge the quality of a particular performance for the guidance of the public.

The *financial editor* is in charge of reports of the stock-market price tables and various other market quotations carried by his newspaper. In addition, he may write a daily column about general business affairs.

The *sports editor* is one of the most widely read contributors to any newspaper. On large newspapers the sports editor has several assistants to help him report and comment on sports events.

The *aviation editor* and the *auto editor* are examples of special writers used by newspapers and magazines to report developments in industries which are of especial interest to the public.

The *science editor* is a special journalist of increasing importance because of great public interest in new developments in various scientific fields.

The *society editor* prepares news of engagements, weddings, and various social functions among the people of the community who are regarded as "society." This job is usually handled by a woman.

The *picture editor* has become increasingly important on the modern newspaper. He must be a good judge of news pictures, and often he is responsible for a picture page on which groups of photos are arranged in a *layout*. The picture editor usually is responsible for seeing that this page has balance and human interest.

Photographers work with the picture editor, covering the city and surrounding territory to obtain pictures in much the same fashion as the reporters obtain their news. Photographers usually accompany the reporter on a story of importance, so that the story may be covered from both angles. In a few instances, newspapers have employed *reporter-photographers*, or men who are able to cover the story and take the pictures as well. Some of these men were reporters who learned how to operate the complicated speedflash news camera, while others were photographers who were also good reporters.

Newspaper Department Heads are those who supervise the work of the editorial employees in various departments. Most of them have worked up from the ranks of regular newspaper employees. The *city editor* assigns the reporters to their news beats. The *news editor* selects the various stories received from the city desk and from other parts of the world by press association wire and determines the place and space they will occupy in the paper. The *copy desk chief* supervises the copyreaders.

The department heads work under the supervision of a *managing editor*, who may have one or more assistants.

Workers on News Magazines and Other Journals. The growth of news magazines and trade publications has opened up many opportunities for those who wish to enter the field of journalism. Many newspaper

Radio and Television stations have newsrooms where journalists prepare news releases. The men in this NBC newsroom are preparing the script for a *leeway*. A leeway is a prearranged delay made at the beginning of a regular program, so that an important news bulletin can be broadcast.



NBC

workers have been drawn quite naturally into the news magazine field, since the purpose of the news periodical is to gather, and then to summarize, the daily news of the previous week or month. The trade publications of industries, professions, and other special groups also have attracted former newspapermen. The lines between jobs on these journals are not quite so clearly drawn as they are on the newspaper. But these publications usually have staff correspondents in the larger cities, special writers who are assigned to cover more important matters, and various editors who work in the publication offices.

Journalism in Radio and Television. A new kind of journalist, the radio *news commentator*, or *newscaster*, appeared during the 1930's. These are men and women whose job it is to sift the day's news for the most important items, and broadcast them in interesting fashion. The news commentator may be employed by a local station, or he may broadcast to the nation over one of the large radio chains. The large networks have radio newsrooms in which editors prepare news scripts for the announcers' news reports received by wire from the various news services. Some radio networks also send correspondents to foreign countries, from which they broadcast by short-wave.

The television newscaster has the advantage of showing newsreel films, as well as photographs, maps, and charts as he reports the news. *Live*, or on-the-spot, telecasts of news events often require a minimum of interpretation by an announcer or commentator.

Many of the persons engaged in radio and television news work had their early experience on newspapers.

Education in Journalism

On-the-Job Training. Editors of equally high standing disagree as to whether it is better for the young person who aspires to become a journalist to study for the profession in a school of journalism, or to gain a liberal education in a college of the arts. Some editors

prefer to hire young men and women with general high school and college training, and give them an apprenticeship training on the newspaper or magazine. In the United States, this training usually begins with a job as a copy boy or girl. This is a job which compares with an office boy's position in the average business office. The copy boy's job is a lowly one, but it offers a fine opportunity to learn many phases of the work.

Schools of Journalism. Many persons have reached high places in journalism with little or no formal education. But many new journalists today prepare for their careers by attending schools of journalism.

The first course in journalism in the United States was given in 1869 at Washington University, later named Washington and Lee University, Va. This course was given at the suggestion of General Robert E. Lee. In 1904, the University of Illinois offered the first four-year course for journalism students. The first separate school of journalism was founded in 1908 at the University of Missouri. Joseph Pulitzer, publisher of the old New York *World*, was one of the first publishers to recognize the value of a formal education in the field of journalism. He endowed the Columbia University School of Journalism, which was founded in 1912. Many colleges and universities have departments of journalism. But only a few of these schools have been fully accredited by the American Council on Education for Journalism, the national accrediting agency for education in journalism.

Ethics and Traditions

The highest ideals of any profession are contained in its code of ethics. In the medical and legal professions, ethics are so highly developed and so clearly outlined that violations may cause a doctor or a lawyer to lose his practice. Journalism has gone a long way toward developing high standards, but as a whole the profession has not yet developed the means of enforcing these standards or of taking any action against members of

JOURNALISM

the profession who violate them. Only the British Institute of Journalists and the Australian Journalists' Union have developed means by which a member of their profession may be barred for unethical practices.

In the United States each journalist polices himself. But nevertheless, a standard of ethical conduct has been set up which is followed, for the most part, by the majority of working newspapermen and periodical workers.

Probably the most fundamental of journalistic ethics is contained in the principle that "there are two sides to every story." Whether the ethical journalist covers, writes, or edits a story, he has this principle in mind. Newspapers and magazines opposed to labor unions occasionally instruct reporters and writers to "cover" strikes by getting facts only from representatives of management. The workers' side of the picture was then either ignored or deliberately misstated. On the other hand, publications which favor labor may give only the union's side of the strike, ignoring any justification there may be for the actions of management.

One of the strongest ethical traditions of journalism is never to violate a confidence. Sometimes a story is given to a journalist by a person who exacts a promise that the source of the story will not be revealed. Ethical journalists have resisted all kinds of pressure to get them to tell the source of their story. There have been instances when journalists refused to tell their editors or their publishers, and have even gone to jail for refusing to reveal the source to a court of law.

The "off-the-record" confidence is one which most public officials have come to recognize as a fundamental part of American journalism. When a person tells a journalist something "off the record," he can almost always be assured that the information will not be published unless he gives permission.

There have been instances where confidences have been violated, but not many. During World War II, several newspapermen released information in violation of military and naval censorship. The tradition of freedom of the press saved these men from punishment, although their releases actually might have endangered the security of the nation in time of grave danger.

In the United States, vulgarity and sensationalism have been stumbling blocks to attaining the highest standards of journalism. Such practices have been given the name "yellow journalism." This type of journalism may blacken the character of individuals through distorted or false news stories, violate the privacy of individuals to secure sensational stories with little news value, and run stories and pictures which are just short of being indecent. See OUTCAULT, RICHARD FELTON.

Famous Journalists

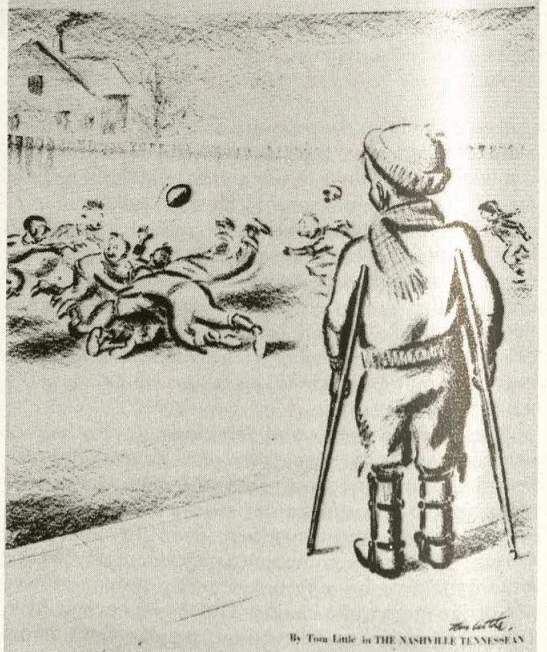
The first men to give rise to the term *journalism* are still regarded as having been among the leaders of the profession. They include Joseph Addison, Richard Steele, Jonathan Swift, Daniel Defoe, and Samuel Johnson in England, and Theophraste Renaudot in France. These men were frequent contributors to magazines during the 1600's and 1700's. In addition most of them wrote forceful pamphlets about their views on public affairs. They differed from the writers of their time in that they did not confine their writing to pub-

lished books, but also wrote a great deal for journals. During the 1800's, W. E. Henley was a leader among English journalists.

In the United States, newspapers began to be published successfully during the 1700's. Men who became important journalists during that time were John Campbell, publisher of the *Boston News-Letter*; James Franklin, brother of Benjamin Franklin and publisher of the *New-England Courant*; William Bradford, publisher of the first New York paper, the *Gazette*; and Isaiah Thomas, who began the *Massachusetts Spy* in 1775.

Journalists who started a colorful era in the newspaper field during the 1800's included William Cullen Bryant, editor of the *New York Evening Post*; Charles Dana, editor of the *New York Sun*; James Gordon Bennett, editor of the *New York Herald*; Horace Greeley, editor of the *New York Tribune*; and Joseph Pulitzer, who bought the *New York Evening World*. This was the period of "personal journalism," when each publisher

WONDER WHY MY PARENTS DIDN'T GIVE ME SALK SHOTS?



Pulitzer Prizes are awarded each year for outstanding achievements in American journalism. This cartoon advocating polio shots for children won for its artist the 1957 Pulitzer award in cartoons.

wrote his own editorials and criticized his fellow publishers in strong language. The personal journalist was not confined to the large cities, however. In Emporia, Kan., William Allen White achieved nation-wide fame for his editorials in the *Emporia Gazette*.

The 1900's saw the coming of the "chain paper" publishers. The most outstanding of these were E. W. Scripps, founder of the Scripps-Howard chain, and William Randolph Hearst. Hearst became a power in American journalism and politics in the early 1900's.

The writers and correspondents of the early papers were even more famous than the publisher-journalists in many instances. Richard Harding Davis was one of the most colorful war correspondents to capture the

public imagination of his time. Davis covered the Spanish-American, the Boer, and the Russo-Japanese wars, and the early part of World War I. Floyd Gibbons, another famous war correspondent of World War I, later became prominent as a radio commentator.

During World War II many newspapermen achieved fame as war correspondents. The most notable was Ernie Pyle (see PYLE, "ERNE," ERNEST TAYLOR).

Careers in Journalism

The salary of the average journalist is not high. It falls below the average income of doctors and lawyers, but is above the average income of teachers. Some special writers get as much as \$500 a week, and many columnists whose writings are syndicated (printed in many papers) receive from \$40,000 to \$100,000 a year. The salary scales for the workers on newspapers, press associations, and some news magazines have steadily improved since 1934, when the American Newspaper Guild, a national labor union affiliated with the Congress of Industrial Organizations, was organized. This organization, and a number of local newspaper unions affiliated with the American Federation of Labor, have done much to secure higher basic wages and better working conditions for the profession. Like most other occupations, there are also positions open for accountants in the field of journalism. Artists and cartoonists also can find employment in journalism.

Pulitzer prizes are among the most coveted journalism awards. Eight, ranging from \$500 to \$1,000, are awarded each year. They are given for (1) meritorious public service, (2) local reporting under deadline pressure, (3) local reporting not under deadline pressure, (4) national affairs, (5) international affairs, (6) editorial writing, (7) cartoons, and (8) news photography.

Another coveted prize in journalism is the Heywood Broun Memorial Award, given each year to the newspaperman who performed some outstanding service in the spirit of Heywood Broun, a famous columnist for many years. The award, a \$250 U.S. Savings Bond and a guild citation, is presented by members of the American Newspaper Guild, of which Broun was a founder.

Nieman Fellowships, awarded every year by Harvard University, are for the purpose of furthering the education of practicing young journalists. EARL FRANKLIN ENGLISH

Related Articles. See the list of biographies under the heading of Editors, Journalists, and Publishers in the BIOGRAPHY section of the READING AND STUDY GUIDE. See also the following articles in WORLD BOOK:

Cartoon	Magazine	Publishing
Editorial	News Service	Pulitzer Prizes
Foreign Correspondent	Newspaper	War
Fourth Estate		Correspondent

Outline

- I. Journalists at Work
 - A. The Newspaper
 - B. Special Assignments
 - C. Newspaper Department Heads
 - D. Workers on News Magazines and Other Journals
 - E. Journalism in Radio and TV
- II. Education in Journalism
 - A. On-the-Job Training
 - B. Schools of Journalism
- III. Ethics and Traditions
- IV. Famous Journalists
- V. Careers in Journalism

Questions

What are the five questions that are usually answered in a standard news story?

When and where was the first separate school of journalism founded?

What is one of the strongest ethical traditions in journalism?

Why must newspapermen have "a nose for news"?

What is the job of a rewrite man? A feature editor?

What is *yellow journalism*? A *chain paper publisher*? A *rewrite man*?

What are the eight categories in which the most sought-after prizes in journalism are awarded?

What was the period of personal journalism?

How did the invention of radio and television develop a new type of journalism?

Who was Joseph Pulitzer? Richard Harding Davis?

Books for Young Readers

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JOURNEYMAN. See APPRENTICE; GUILD.

JOUST. See KNIGHTS AND KNIGHTHOOD.

JOY. See EMOTION.

JOYCE, JAMES (1882-1941), was one of the most original and controversial writers of his time. He revolutionized the plot, characters, and style of fiction.

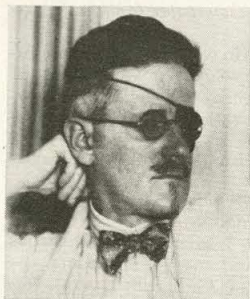
Joyce's first important book was *Dubliners*, a collection of short stories written by 1907, but not published until 1914. In these stories, the author expresses his anguish and anger at the thwarting of all genuine feelings in a modern city. Joyce's first novel, *A Portrait of the Artist as a Young Man* (1916), describes his effort to free himself from every tie in order to develop a conscience for his time through art.

In *Ulysses* (1922), his most famous book, Joyce described with great candor 18 hours in the life of a Dubliner. He drew an elaborate parallel between his hero's adventures and the incidents in Homer's *Odyssey*. For this book, Joyce evolved the *interior monologue*, an untold record of the flow of thoughts into the consciousness. Many authors have imitated this method.

JUAN, DON

The U.S. Post Office called *Ulysses* obscene and banned it, but a federal judge later removed the ban.

In *Finnegans Wake* (1939), Joyce sets forth the life of a Dublin innkeeper and his family as a model of all existence. He suggests the basic unity of all peoples at all times by using expressions from many languages.



Berenice Abbott

James Joyce

Joyce was born in Dublin, Ireland, but in 1904 he went into voluntary exile. He lived chiefly in Trieste until 1915, then in Zurich until 1919, and in Paris until 1939. He left Paris during World War II, and died in Zurich. His other books include *Chamber Music* (1907), a book of

lyrics; *Exiles*, a play (1918); *Pomes Penyeach* (1927), a volume of poetry; and *Collected Poems* (1937). An edition of Joyce's *Letters* was published in 1957. RICHARD ELLMANN

JUAN, DON. See DON JUAN.

JUAN DE FUCA, *HWAHN duh FOO kuh*, **STRAIT** is a narrow body of water which separates Vancouver Island from the state of Washington. The strait, with Puget Sound on the south and Georgia Strait on the north, forms an important waterway through which ships pass to the Pacific Ocean from Seattle, Wash., and Vancouver and Victoria, B.C. Juan de Fuca Strait is about 100 miles long and 11 to 17 miles wide.

The United States and Great Britain disputed for many years over the ownership of the island of San Juan, at the eastern end of the strait. Wilhelm I, Emperor of Germany, arbitrated the dispute in 1872. Wilhelm decided the island should belong to the state of Washington. The International Boundary Line runs through Haro Strait, west of the island.

Juan de Fuca Strait was named for a Greek navigator who claimed to have discovered the waterway in the 1500's. His claim was later proved to be false, but the name was kept.

BOSTWICK H. KETCHUM

See also PUGET SOUND.

JUAN FERNÁNDEZ, *HWAHN fer NAHN das*, is the name of a group of three islands which lie about 400 miles west of Chile in the Pacific Ocean. These islands are part of Chile. They include Más a Tierra (*landward*), Santa Clara, and Más Afuera (*farther out*). The island group has an area of about 70 square miles.

Over 400 Spanish-speaking people live on Más a Tierra, the largest island. They make their living by fishing for lobsters. Más a Tierra is famous as the island where Alexander Selkirk stayed alone for four years (1704-1708). Selkirk's adventures came to the attention of the famous English writer, Daniel Defoe, who used them when he wrote *Robinson Crusoe*.

Juan Fernández, a Spanish explorer, discovered the islands about 1563.

ROBERT N. BURR

See also ROBINSON CRUSOE; SELKIRK, ALEXANDER.

JUÁREZ, *HWAH rays*, **BENITO PABLO** (1806-1872), was one of the greatest Mexican political leaders. He began far-reaching economic and political reforms, and

led his country in a war of independence. His integrity and concern for the poor were almost legendary.

Juárez, an Indian, was born and educated in the state of Oaxaca, and practiced law there from 1834 to 1846. In 1847, he was elected governor and made Oaxaca a model province. Juárez joined the liberal movement, which sought constitutional government, abolition of independent military and clerical power, and redistribution of the huge landholdings of the church. The dictator Santa Anna exiled him in 1853 (see SANTA ANNA, ANTONIO LÓPEZ DE).

In 1855, Juárez returned to Mexico and became minister of justice. He had the famous Juárez Law enacted. This law reduced the power of the army and the clergy. In the "war of reform" between conservatives and liberals (1858-1860), Juárez was provisional president of the liberals. When they won, he was elected President of Mexico in 1861.

Juárez found the government in serious financial difficulty, and stopped payment on European loans for two years. The French used his action as an excuse to invade Mexico and install Prince Maximilian as emperor. Juárez directed the war for freedom. In 1866, the United States virtually ordered the French out of Mexico, and French troops withdrew. Maximilian was executed, and Juárez returned to Mexico City (see MAXIMILIAN). Juárez again became president in 1867. He separated church and state, established religious toleration, and altered the land system.

In 1871, Juárez became a candidate for a second term as president. No candidate received a clear majority at the polls. The Mexican congress decided the issue by electing Juárez. But revolts in the northern provinces marked his final years in office.

HARVEY L. JOHNSON

See also MEXICO (Reform; The French Invasion).

JUBAL. See HARP.

JUBILEE, *JOO buh lee*, is a celebration on the 25th or 50th anniversary of an important event. Jubilees are usually celebrated by nations. King George V of England celebrated his 25th year of rule with a jubilee. The Roman Catholic Church holds jubilees every 25 years and on special occasions proclaimed by the pope.

The word *jubilee* comes from an ancient Hebrew word which means *ram's horn*, or *trumpet*. According to Hebrew law, a year of atonement and rejoicing was proclaimed every 50th year.

ELIZABETH HOUGH SECHRIST

JUDAH, in the Old Testament, was the fourth son of Jacob. The story of his life is told in Genesis 29 to 49. Judah kept his brother Joseph from being killed, and suggested instead that Joseph be sold to the Ishmaelites as a slave. Judah also obtained Jacob's consent to let Benjamin go back with the brothers to Egypt, and pleaded before Joseph for Benjamin. Phares, one of the five sons of Judah, is said to be an ancestor of the Messiah.

GLEASON L. ARCHER, JR.

JUDAH. See JEWS (Israel and Judah); JUDEA.

JUDAH HA-LEVI. See HALEVI, JUDAH.



Chicago Historical Society

Benito Juárez

JUDAISM is the religion of about 12,000,000 Jews who live in all parts of the world. It is the oldest religion of the Western world, and the first to teach *monotheism*, or belief in One God. Judaism is founded on the laws and teachings of the Hebrew Bible, or Old Testament, and of the Talmud. Christianity and Islam are both derived from Judaism, even though they differ in many basic beliefs and practices. Both religions accept the Jewish belief in One God and the ethical teachings of the Hebrew Bible. For the history and contributions of the Jewish people, see **Jews**.

The Structure of Judaism

The **Synagogue** is the Jewish house of worship and the center of Jewish education and communal affairs. In most synagogues, a *cantor* leads the services. He chants portions of the prayers aloud while the congregation prays silently or chants along with him. Most prayers are chanted in Hebrew, the language in which they were first written. But, in many synagogues, some prayers are recited in the *vernacular*, or the language of the country. Selections from the Bible are read on the Sabbath, on holidays, and on Mondays and Thursdays. The Jewish Sabbath begins at sunset Friday evening and lasts until sunset Saturday. A synagogue may sponsor study groups and education programs. It usually has a school where children study Jewish religion, literature, and history, and the Hebrew language. It is also a center of philanthropic activities for the Jewish community.

The **Rabbi** serves as spiritual leader, teacher, and interpreter of Jewish law. He spends many years in a rabbinic seminary studying Hebrew sacred writings and Jewish history, philosophy, and traditional law. He usually also has a broad knowledge of nonreligious subjects. Each congregation chooses its own rabbi.

The rabbi and his congregation may belong to national organizations that sponsor religious and educational programs. But these voluntary organizations do not control the thoughts or conduct of their members. Judaism has no single head, and no international body with authority over religious practice.

Religious Groups. Because there is no one authority, Jews have found it possible to differ about their religion and still remain Jews. Today, these differences are expressed through three major religious groups—Orthodox, Conservative, and Reform.

Orthodox Judaism believes that every word of the five books of Moses in the Hebrew Bible and its interpretations in the Oral Law came from God on Mount Sinai. Orthodox Jews strictly observe Jewish laws and traditions. They rely on the laws stated in the *Shulhan Aruk*, the book of codes, and on the decisions of recognized, learned, Orthodox rabbis. Men wear skull caps or hats at all times as a sign of respect to God. Some Orthodox men wear beards and sideburns. The Orthodox keep the Sabbath as a complete day of rest, study, prayer, and devotion. They do not work, travel, or carry things on their Sabbath days. They strictly observe all dietary rules. Men and women sit separately in Orthodox synagogues, where they chant almost all prayers in Hebrew. More than 720 congregations and about 300,000 member families belong to the Orthodox movement in the United States. Canada has about 170 Orthodox congregations.

JUDAISM



The **Menorah**, a candlestick with seven branches, has been an important symbol of Judaism since early Biblical times.

Frank J. Darmstadter,
The Jewish Museum, N.Y.

Conservative Judaism recognizes the authority of Jewish law and tradition as Divine. But it believes that the concept of revelation is subject to many interpretations. It maintains that precise interpretations of religious doctrines must not divide Jews into opposing groups. Therefore, it tries to stress the unity of all Jews. Conservative Judaism also insists that it is important to recognize the role of other faiths in the salvation of mankind. Conservative Jews are expected to observe the dietary laws and keep the Sabbath and festivals. Some Conservative synagogues have modified certain rituals that they believe originated after the Talmudic period. Men and women may sit together in a Conservative synagogue. Portions of the service are sometimes read in the vernacular. The Conservative movement in the United States has about 600 congregations and about 200,000 member families. Canada has about 25 Conservative congregations.

Reform Judaism believes that each generation has the right to accept, reject, or modify the traditions it has received. Reform Jews lay more stress on the prophetic teachings of Judaism, and less on ritual observances. But they, too, follow a year-round program of Sabbath and holiday ceremonies. They may or may not observe the dietary laws, in accordance with their personal convictions. Reform synagogues follow the Biblical pattern in observing Jewish holidays. Men wear no hats or prayer shawls in most of their synagogues, and much of the service is in the vernacular. Reform synagogues often give women a greater part in the service. The Reform movement in the United States has about 550 congregations and about 250,000 member families. Canada has five Reform congregations.

The Teachings of Judaism

Faith in One God forms the basis of Judaism. In all Sabbath and festival services, and in their daily prayers, Jews repeat: "Hear O Israel, the Lord our God, the Lord is One" (Deut. 6:4). Judaism teaches that God is good and demands righteous conduct of His people. "What does the Lord require of thee, only to do justly, and to love mercy, and to walk humbly with thy God?" (Micah 6:8). The primary interest of the Jewish religion is in ethical conduct in this world.

Jews believe that God created man in His own image (Gen. 5:1), and that all men deserve to be treated with dignity and respect. Jewish thought stresses the impor-

JUDAISM

tance of freedom. It teaches that man's basic rights come from God, and that no ruler may take them away.

The Messiah. Throughout the ages, Jews believed that a personal Messiah, a descendant of the house of David, would come to redeem mankind on earth. Orthodox Jews still accept this belief. But many Conservative and Reform Jews now speak of a Messianic Kingdom of Justice. They believe that a period of freedom and peace will come, not miraculously, but with God's help and the efforts of all men.

Service to God. Jewish tradition teaches that Abraham, the father of the Jewish people, made a *covenant*, or agreement, promising to worship God and to spread His word. One legend says that God offered the Bible and its Ten Commandments to other nations before He offered it to Israel. The others refused, because they thought God was imposing too many restrictions on them. But Israel accepted the burden of the law and

the service of God. The prophet Isaiah pictured Israel as a suffering servant of the Lord, dedicated to God's cause even in the face of suffering.

Judaism accepts converts, but it does not seek them. Jews do not regard it as necessary for other peoples to accept Judaism in order to lead a good life. The Talmud, the book of law and lore, stresses ethical conduct among all peoples. It teaches that "the righteous of the nations have a share in the world to come."

The Scriptures of Judaism

Jews have often been called *the People of the Book*. They place great emphasis on scholarship, particularly the study of the Scriptures and religious writings.

The Hebrew Bible, known as the Old Testament, is the foundation of the Jewish religion. It consists of the Torah, the Prophets, and the Writings. Jews do not regard the New Testament as part of their canon.

The Torah, or *The Law*, is the heritage of the Jewish people, and serves as the religious structure of Judaism.



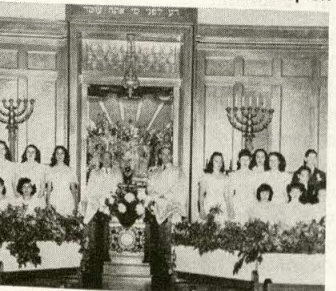
Barry, Three Lions

Rosh Hashanah is marked by the sound of the shofar, or ram's horn.



Congregation B'nai Zion, Chicago

Passover is observed by eating *matzah*, or flat, unleavened bread. **Shabuot** is celebrated by confirmation ceremonies in some temples.



Lothrop, Lee, and Shepard, from *One God* by Florence Mary Fitch

JEWISH FEASTS AND FASTS

Name	Hebrew Date	Gregorian Date	Significance
*Rosh Hashanah	Tishri 1, 2	Sept. or Oct.	The Jewish New Year.
Tzom Gedaliah	Tishri 3	Sept. or Oct.	A fast day to remember the assassination of the Jewish ruler Gedaliah.
*Yom Kippur	Tishri 10	Sept. or Oct.	The Day of Atonement, the holiest day in the Jewish Year. A fast day.
*Sukkot	Tishri 15 to 23	Sept. or Oct.	The Feast of Tabernacles, a harvest festival that recalls the booths the Jews lived in when they wandered in the wilderness.
Shemini Atzeret	Tishri 22	Sept. or Oct.	The eighth day of Sukkot, sometimes considered a separate holiday.
*Simhat Torah	Tishri 23	Sept. or Oct.	A day of rejoicing in the Torah.
*Hanukkah	Kislev 25 to Tebet 2	Dec. or Jan.	The Feast of Dedication to honor the victory over the Syrians and the rededication of the Temple in 165 B.C.
Asarah B'Tebet	Tebet 10	Dec. or Jan.	A fast day to remember the beginning of the siege of Jerusalem by the Babylonians in 586 B.C.
*Tu B'Shebat	Shebat 15	Jan. or Feb.	Arbor Day to celebrate the planting of trees in Israel.
Taanit Esther	Adar 13	Feb. or March	A fast day to remember Queen Esther's fast to save her people in Persia from Haman's plot to destroy them.
*Purim	Adar 14	Feb. or March	A joyous festival to celebrate the defeat of Haman.
*Passover	Nisan 15 to 22	March or April	A Festival of Freedom to remember the exodus from Egypt.
*Lag Ba' Omer	Iyar 18	April or May	The Scholar's Festival, to celebrate the end of an epidemic among students of Rabbi Akiba in Palestine.
*Shabuot	Sivan 6, 7	May or June	The Feast of Weeks, to celebrate receiving the Torah at Mount Sinai.
Shibah Asar B'Tammuz	Tammuz 17	June or July	A fast day to remember the day the Romans made a breach in the wall of Jerusalem in A.D. 70.
*Tishah B'Ab	Ab 9	July or August	A fast day to mourn the destruction of the First Temple in 586 B.C. and the Second Temple in A.D. 70.

*Has a separate article in THE WORLD BOOK ENCYCLOPEDIA.

It consists of the *Pentateuch* (the *Five Books of Moses*), the first five books of the Bible. The Torah includes the history of the Jews from the Creation through the death of Moses. It contains the Ten Commandments and the basic laws of Judaism.

The Prophets gives an account of the Jews in Canaan, the kingdoms of Judah and Israel, and the Babylonian Exile. It also contains the great moral teachings of such prophets as Isaiah, Amos, and Micah.

The Writings contains poetic writings, proverbs, psalms, and historical chronicles.

The Talmud. Judaism did not stop growing when the Bible was completed. Rabbis and scholars interpreted Biblical law in order to adapt it to daily life. Their interpretations came to be known as the *Oral Law*, and were considered as binding as the written law. About A.D. 200, Rabbi Judah Hanasi, a Palestinian scholar, finished compiling many of the oral laws into one written work, called the *Mishnah*. The *Mishnah* was the first written compilation of Jewish laws after the Bible. Later teachers discussed, enlarged, and interpreted the *Mishnah*. The record of their discussions is called the *Gemara*. The *Mishnah* and the *Gemara* make up the *Talmud*. This work serves as a guide to the civil laws, religious laws, and teachings of Judaism. See TALMUD

Customs and Ceremonies

Ritual plays an important part in the life of every religious Jew. From birth to death, Jewish law, custom, and ceremony affect every part of his life. But individual Jews differ in the degree to which they observe the rituals.

Daily Life. In his home and daily life, the Jew constantly reminds himself of his duties and obligations to God. Traditionalist Jews follow dietary rules that come from Biblical laws. They do not eat pork or pork products. They eat the meat of only those animals that chew their cuds and have cleft hooves, such as cattle and sheep. They do not eat shellfish, such as oysters, but only those fish that have scales and fins. They eat beef that has been slaughtered in a special way, and they free meat of blood before eating it. They keep milk and meat products separately and do not serve them at the same meal. Food prepared in accordance with Jewish dietary laws is called *kosher*, meaning *proper for use* (see KOSHER).

Many explanations have been offered for the origin of the dietary laws. Some scholars believe that some of these laws began for health reasons. Other scholars feel that some laws had a moral basis, because they taught men sympathy for all living things. Many foods forbidden to Jews come from animals or birds of prey that cause suffering to others. The kosher manner of slaughtering animals is designed to kill them quickly, with as little pain as possible. Orthodox Judaism bases the separation of meat and dairy products on the Biblical law, "Thou shalt not seethe a kid in its mother's milk" (Ex. 23:19). This law may originally have been a measure to prevent the ancient Israelites from participating in pagan customs.

Some Jews observe the dietary laws as a sign of their faith, as a means of keeping their Jewish identity, or as a way of bringing holiness even into the simple act of eating. Orthodox Jews regard these laws as Divine decrees.

A traditional Jew places a small *mezuzah* at the upper section of the right doorpost of his home and of each room. This wooden, metal, or glass case is about 3 inches long and contains parchment inscribed with 15 verses from the Bible. The *mezuzah* serves as a reminder of God's presence everywhere.

During his weekday morning prayers, a traditionalist Jew wears *tefillin*, or phylacteries. These are small boxes containing parchments with four passages from the Bible. A leather strap connects one box to the head. Another strap attaches the second box to the left arm near the heart. The phylacteries follow a Biblical decree (Deut. 6:8), and symbolize the Jew's emotional and intellectual belief in Judaism. A Jew wears a prayer shawl called a *tallit* when he prays, as a reminder of his religious faith. An Orthodox Jew also wears a fringed garment as part of his regular dress, in observance of a Biblical law (Numb. 15:38).

Special Occasions. When a Jewish boy is 8 days old, he is circumcised as a symbol of the covenant God made with Abraham. At the age of 13, he becomes *Bar Mitzvah*, or a full member of the Jewish community. He chants a portion from the Bible at a special ceremony in the synagogue. Some Reform and Conservative synagogues have a similar ceremony for girls called *Bas Mitzvah*.

Before a traditional Jewish wedding, a *ketubah*, or marriage contract, signed by two witnesses, is prepared for the bride and groom. The document states the groom's obligations to his bride. The marriage takes place under a *huppa*, or canopy, that symbolizes the union of the bride and groom and their future home. They sip wine from a single cup to show the common life they will share. At the end of the ceremony, the groom breaks a glass as a reminder, in the midst of his happiness, of the destruction of the Temple.

Jews observe certain rituals in connection with mourning. After funeral services, members of the immediate family *sit Shiva*. They stay in their homes for seven days, but do not mourn on the Sabbath. Mourners recite the *Kaddish* prayer, written in Aramaic. This prayer does not speak of death, but praises God and His decrees. Traditional Jews observe mourning for parents for one year, and repeat the *Kaddish* daily. They observe the *yahrzeit*, or anniversary of the death, and recite memorial prayers called *yizkor* on holy days. Reform Jews may modify these practices somewhat, but follow them essentially.

Judaism tries to sanctify marriage, to ease death, to strengthen character, and to nourish hope through a life of colorful, meaningful, and spiritual practices that make a Jew a Jew.

PHILIP S. BERNSTEIN

Critically reviewed by SAMUEL BELKIN and LOUIS FINKELSTEIN

Related Articles. See the separate article on each festival marked with an asterisk in the table with this article. See also the following articles:

Ancient Civilization	Jews	Sabbath
(Religion and Ethics)	Jubilee	Synagogue
Bar Mitzvah	Kosher	Tabernacle
Bas Mitzvah	Messiah	Talmud
Bible	Old Testament	Temple
Cities of Refuge	Oral Law	Ten Command-
High Priest	Rabbi	ments
Jehovah	Rosh Hodesh	

JUDAS ISCARIOT

JUDAS ISCARIOT was the apostle who betrayed Christ with a kiss. Judas was the treasurer of the group (John 12: 6), and accompanied Jesus throughout His ministry. As a guest with Jesus in the home of Mary and Martha, he criticized Mary for pouring valuable ointment on Jesus' feet instead of selling it and giving the money to the poor. At the Last Supper, Jesus told him that he would be a traitor and told him to do quickly what he intended (John 13: 21-27).

Judas betrayed Jesus to His enemies for 30 pieces of silver, the price of a slave. He came with the soldiers who arrested Jesus in the garden, and identified Him by kissing Him. Matthew says that Judas later returned the money to the chief priests who gave it to him, and then hanged himself (Matt. 27: 3-8). Acts (1: 18) tells that he used the money to buy a field and afterwards he fell and was killed. A *Judas kiss* means an act that appears friendly, but is not. The *Judas tree* is the kind of tree on which Judas is said to have hanged himself. The name *Iscairiot* probably means *man of Kerioth*, a village in Palestine. FULTON J. SHEEN and MERRILL C. TENNEY

See also POTTER'S FIELD.

JUDAS MACCABAEUS, *MAK uh BEE us*, was the son of a priest named Mattathias and the leader of the Jews in their struggle for independence in the 100's B.C. His story is told in the Apocryphal book of I Maccabees (see APOCRYPHA).

At that time, the Jews were subjects of the Seleucid Empire, one of the states formed out of Alexander the Great's empire. The Seleucid king, Antiochus IV (called Epiphanes), wanted his subjects to adopt Greek culture and customs. Many Jews did this, almost to the point of abandoning their religion. But others resisted.

Antiochus also wanted to get possession of the treasures in the Jews' Temple. About 168 B.C., angered by Jewish resistance to his policy, he entered Jerusalem, killed many of the people, and defiled the temple by building an altar to the Greek god Zeus there. The practice of Jewish law was forbidden, and copies of the law were destroyed. Jews who disobeyed were killed.

War broke out when an officer of the king came to the village where Mattathias lived and tried to make him offer sacrifice to the pagan god. Mattathias refused. He fled to the hills, and although he died soon after, his son Judas took his place. Though outnumbered, he repeatedly defeated the king's armies. About 165 B.C., he re-entered Jerusalem and purified and rededicated the temple. The Jewish feast of Hanukkah commemorates this event (see HANUKKAH). Judas won other victories, but about 161 B.C. he died in battle. His brothers, Jonathan and Simon, carried on. JOHN BRIGHT

JUDAS TREE. See REDBUD.

JUDD, CHARLES HUBBARD (1873-1946), was a leading American psychologist and educator. He taught at the University of Chicago from 1904 to 1938, and served as chairman of the education department after 1909. He researched in psychology, particularly on measurement of achievement in school subjects. He became well known for his views on education. He was born in India of American parents. GALEN SAYLOR

JUDE, *jood*, is a short epistle which forms the 26th book of the New Testament. It is one of seven books called General Epistles because they are letters addressed

to Christians in general. This Epistle is only 25 verses long. Its date is not known. In it the author seems to be speaking against the false teachers whom Peter attacked in his second Epistle. Jude warns Christians about future judgment by God. Jude (or Judas) is also the name of a brother of James. FREDERICK C. GRANT

JUDE, or **JUDAS, SAINT**, was one of the apostles of Christ. He was also known as Lebbaeus or Thaddaeus (Matt. 10:3, Mark 3:18). He was not the Judas who betrayed Christ. Only one glimpse of him appears in the Gospels, through a question addressed to Jesus. When Christ told the apostles that He would go unto His Father, but that He would later manifest Himself to those who loved Him, Judas asked Jesus how He would manifest Himself (John 14:22). Jesus then answered that the Father would send the Comforter, or Holy Ghost, in His name.

Roman Catholic tradition holds that Judas, or Jude, wrote the epistle of Jude in the New Testament. Other authorities credit it to a different Jude. In the later teachings of the Church, Saint Jude is the patron of those suffering from desperate cases of illness, such as cancer. His feast day is generally celebrated as the feast of Saints Simon and Jude on October 28. The Eastern Orthodox Church celebrates the feast of Saint Jude on June 19. FULTON J. SHEEN and MERRILL C. TENNEY

JUDEA was the name of the country in the southern part of Palestine in ancient times. The region was originally named for the tribe of Judah which had settled there. The inhabitants of the area were called *Judeans*. The word *Jew* comes from this name.

King David came from the Judean territory. He united all Israel into one kingdom and made Jerusalem its capital. After King Solomon died, the nation was divided into the kingdom of Israel in the north and the kingdom of Judah in the south. Jerusalem remained the capital of Judah. In 586 B.C., the Babylonians captured Jerusalem, and exiled many Jews. The Persian emperor Cyrus allowed the Jews to return to Judea in 538 B.C. Judea gained independence under the Hasmonean dynasty in the 100's B.C., but became a Roman province in 63 B.C. The Jews revolted against Rome in A.D. 66. The state of Judea came to an end in A.D. 70 when the Romans captured Jerusalem and destroyed the Temple.

See also JEHOIAKIM; JEWS; JOSIAH; MACCABEES.

JUDGE is an officer of the government who presides over a law court. The judges of high courts are called *justices* in the United States and in Great Britain.

A *trial judge* presides in the trial, or lower, court. Where a jury is used, it decides questions of fact. The judge decides all questions of law, including the rules that govern what evidence may be admitted. When all the evidence has been heard, and the lawyers for both sides have addressed the jury, the judge tells the jury what rules of law apply.

Sometimes a jury is not used. One reason may be that the case is one where the law requires the judge to decide on the facts. Or perhaps the parties do not wish a jury to decide the case, as in technical questions of science or industry. In these cases, the judge decides the questions both of fact and of law.

An *appellate judge* hears appeals that question the accuracy of the trial judge's decisions on points of law. He may reverse lower-court decisions.

Judges in Great Britain, Canada, Australia, and the federal courts of the United States are appointed for life. This gives them independence from political considerations, and encourages them to be fair and objective. Federal judges may be removed only by impeachment for serious misconduct. Some state judges are appointed under a similar system, and some are elected for long terms.

ERWIN N. GRISWOLD

Critically reviewed by WILLIAM O. DOUGLAS
See also COURT with its list of Related Articles; also IMPEACHMENT; RECALL; SENTENCE (in law).

JUDGE ADVOCATE GENERAL is the officer in charge of legal matters in the United States Army, Navy, or Air Force. In the air force and army, he holds the rank of major general; in the navy, he is a rear admiral. *Judge advocates*, who are lawyers, work under him. The Judge Advocate General with his staff reviews the records of courts-martial to see that justice has been done. He serves as legal adviser to the Chief of Staff of his service, and, in some cases, to the Secretary of the department. In the navy he also gives assistance to naval personnel and their dependents on personal legal problems.

JOHN W. WADE

JUDGES is one of the historical books of the Old Testament, or Hebrew Bible. It is placed among the books of the Earlier Prophets because it explains the early history of the Hebrews from the viewpoint of the prophets (see OLD TESTAMENT [Contents]).

Judges takes up the history of the Hebrews after they conquered Palestine. After Joshua died, the Hebrew tribes had no central government. Whenever danger threatened, a military leader called a *judge* would take command to fight the enemy. When the crisis passed, the judge would give up his leadership and take his place among the people again.

The book tells of the activities of 12 judges. It gives details about six of them, and briefly mentions the other six. One of the judges was a woman, the prophetess Deborah. Critics consider the *Song of Deborah* (chapter 5) one of the great war poems of world literature. Other judges include Gideon, whose small army conquered the Midianites; and Samson, who used his great strength in fighting the Philistines.

ROBERT GORDIS

See also DEBORAH; GIDEON; JEPHTHAH; SAMSON.

JUDGMENT, in law, is the decision of a court. The judgment may be a conclusion based upon evidence developed in the trial. A *judgment by default* is given by a court when the defendant does not defend his case. When the defendant admits the claim against him, the court hands down a *confessed judgment*. A judgment becomes, at least for the time, the law governing the particular case before the court. But judgments may be set aside or reversed by higher courts. In some states and provinces, a judgment of money due becomes a *lien* upon the debtor's real estate. See also DEBT; LIEN; STATUTE OF LIMITATIONS.

THOMAS A. COWAN

JUDGMENT, in the broadest sense, is the ability to weigh facts in order to reach a decision or a conclusion. The simplest form of judgment is *discrimination*. Discrimination is the process of arranging things into groups or classes. The process goes on at many different levels. An ordinary person may look at a signed paper and say, "This is a contract." A lawyer may look at it and say, "You are mistaken. This is meant to be a contract, but it is not valid." Both these statements represent

judgment. In a matter of this kind, the lawyer has "better judgment" than the ordinary person, which means that he can discriminate more exactly between what is a contract and what is not.

Philosophers used to think that objects actually fell into *classes*, each with specific limits. Thus, to these philosophers, judgment meant the ability to put objects in the classes to which they properly belonged. In later times, the view developed that people simply make the classifications of objects, and that in many cases a different set of classifications would work quite as well as the one used. For example, it is customary to mark off the colors green, blue, and yellow. Such colors only seem to exist. But the spectrum fades from red to violet so gradually that no one can draw a sharp line.

Anthropologists report that some tribes divide the spectrum from blue to yellow into two parts, one called "young leaf color," and one called "old leaf color." From our point of view, this seems wrong, because they make no place for the color green. But from their point of view, the addition of an extra color that does not exist confuses things. Both situations show that a good judgment of color means the ability to classify colored objects according to classes the group may have set up.

In recent years there has been much discussion whether discrimination, either in animals or in human beings, is absolute or relative. For example, scientists have sometimes trained goldfish to choose their food from a particular one of three lighted compartments. If the compartments are illuminated to 45, 30, and 15 units of brightness, the fish can be taught always to go to the 15-unit compartment.

The old view assumed that the fish had learned to respond to brightness of a particular degree. But experiments have shown that a fish so trained, when faced with compartments illuminated to 75, 60, and 45 degrees of brightness, unhesitatingly chooses the 45. This shows that the fish has learned, not a particular degree of brightness, but the *relationship*, and chooses the dimmest. Many psychologists believe that all judgment is relative in this sense.

Gestalt psychology contributed the emphasis upon the relativity of judgment. Behavioristic psychology holds that judgments are absolute.

RAYMOND H. WHEELER

See also CONCEPT; PERCEPTION; REASON.

JUDGMENT DAY. See RESURRECTION.

JUDICIAL DEPARTMENT. See JUSTICE, DEPARTMENT OF; SUPREME COURT OF THE UNITED STATES; UNITED STATES CONSTITUTION (Article III).

JUDICIAL PROCEDURE. See COURT.

JUDICIAL REVIEW. See UNITED STATES, GOVERNMENT OF (Judicial Review).

JUDICIARY ACT OF 1789. See SUPREME COURT OF THE UNITED STATES.

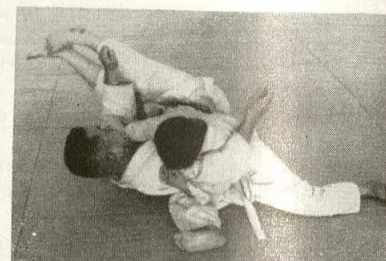
JUDITH is the heroine of the Book of Judith, one of the Apocryphal books of the Old Testament (see APOCRYPHA). The Assyrian general, Holofernes, attacked the Jews and laid siege to the town of Bethulia. The Jews were in despair, but Judith saved them. She went to Holofernes, and her beauty won his favor. On their third night together, she cut off his head while he was asleep. As a result, the Assyrians fled. Judith is presented as an example of patriotism.

JOHN BRIGHT

JUDO



Judo Opponents in Japan bow in polite greeting before beginning the contest.



Monsanto Chemical Co.

A Young Judo Devotee disregards size and weight as he engages his father in a practice match, above. He shows, bottom, how skill can overcome strength.



The Art of Judo lies not so much in great strength as in skillful use of the body and mind. Jujitsu, of which judo is a modified form, literally means gentleness practice.

JUDO, *JOO doh*, is a Japanese sport similar to wrestling. It was once called *jujitsu*, and was practiced by the *samurai*, or military class, of Japan. It was often combined with fencing and archery in military training. Today, judo is practiced throughout the world.

Purpose. Judo involves a complex system of physical and mental skills that help produce both mental and physical fitness. Judo teaches many possible uses of the body, but it also stresses the importance of strategy in defeating an opponent. The basic strategy is one of non-resistance. In judo, an athlete tries to get his opponent off balance so that he can throw, trip, choke, or hold him. Judo includes many bodily techniques that give a smaller opponent an advantage over a larger, stronger opponent.

Types. There are two main varieties of judo: *randori*, or free competition; and *kata*, which only practices the various forms and positions, but does not involve combat. In *kata*, both partners know which exercise will be performed next.

Experts consider judo to be just as much an art as a sport. Judo consists of hundreds of techniques, and every movement has a definite meaning and purpose. The techniques are grouped under three general headings: (1) *nagewasa*, (2) *katamewaza*, and (3) *atewaza*.

Nagewasa teaches several techniques for throwing an opponent's body. It includes tricks of the hand, tricks of the waist, tricks of the legs, and ways of using the body to pull a person down.

Katamewaza studies the ways to pin or lock the opponent's body. It includes neck locks, leg locks, arm

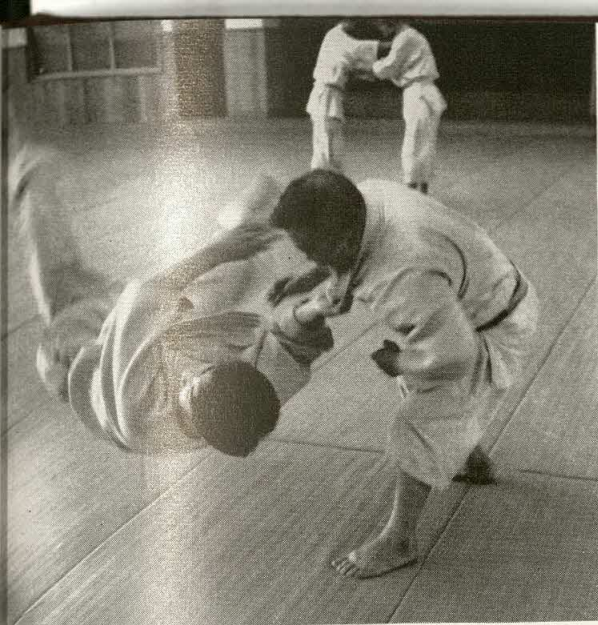
locks, and several methods that keep the opponent from moving his body.

Atewaza includes many tricks of beating or kicking that will paralyze, injure, or kill an opponent. In Japan, the more violent and dangerous techniques are not taught to beginners. Advanced classes make extensive studies of anatomy and physiology to determine points on the body that can cause paralysis, stop circulation, and shut off air. Judo students also learn how to revive a person who may become unconscious.

Practice. Judo requires much rigorous training and instruction. In Japan, all students must receive some training, because judo is considered the principal form of exercise. Usually, two persons practice together, but any number of persons can perform. Students practice together in large groups to the accompaniment of music. Training takes place in a *dojo*, or gymnasium used to practice judo. About 200 square feet are needed for a pair of contestants. The area is covered either by canvas or soft grass. The contestants wear a cotton uniform that covers about three fourths of the arms and legs. They practice in their bare feet.

Throughout the training, instructors stress the importance of acquiring complete mental control and concentration. The student learns to hold his temper in any emergency. He learns to use good judgment, to think constantly, and to reach a quick decision.

Kodokan College, in Tokyo, regulates and establishes the rules for judo throughout the world. Kodokan gives degrees in judo that range from a simple beginner's diploma to the equivalent of a doctor's degree.



Monsanto Chemical Co.

Judo Contestants match skill against skill, each waiting for the opportunity to end the contest with a hold that will make his opponent helpless. A judo student learns to control his body and make clever use of the least amount of strength.

In the United States, judo matches take place either over a definite period of time, or last until one of the two opponents wins a point. A contestant can win a point in a number of ways: he can throw his opponent cleanly to the ground; he can immobilize, or paralyze, his opponent in a certain position for a certain time; or he can force him to give up by using special strangle holds or arm locks. A judo contest does not permit kicking, hitting, or gouging.

One American version of judo is called *hand-to-hand fighting*. It involves techniques of boxing and wrestling, and actually has little resemblance to real judo. This version of judo is taught to men and women in military service and to civilian police.

The Amateur Athletic Union recognized judo as a sport in 1953. It works closely with Kodokan College to regulate judo contests.

T. K. CURETON, JR.

JUDSON, ADONIRAM (1788-1850), a Baptist clergyman, was largely responsible for the founding of the first American Congregationalist and Baptist foreign missionary societies. He was the pioneer American missionary to Burma. He was born at Malden, Mass., the son of a Congregational minister, and was graduated from Brown University and Andover Seminary.

Judson decided on a missionary career in the Far East. He organized a Congregationalist missionary society, which sent him to India after his ordination in 1812. Bible study convinced him of the correctness of adult baptism by immersion, and American Baptists organized a foreign missionary society after he offered to serve them.

In 1813, Judson began working in Burma. He had mastered the Burmese language, written a Burmese grammar, and baptized his first convert by 1819. He completed the Burmese Bible in 1834, and later finished an English-Burmese dictionary. These books are still useful to missionaries.

EARLE E. CAIRNS

JUDSON COLLEGE is a liberal arts school for women at Marion, Ala. It is controlled by the Southern Baptist

JUGGLER OF NOTRE DAME

Convention. Courses offered include art, modern languages, music, religion, and speech. The school was founded as Judson Female Institute in 1838 and became Judson College in 1904. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

JUGGERNAUT, *JUG er naut*, or **JAGANNATH**, is the name of a famous Hindu temple and idol at Puri, in the state of Orissa, India. *Juggernaut* is a Sanskrit word meaning *lord of the world*. Anantavarman Colanga completed the costly shrine in the 1100's. The wooden idol has a hideous black face with a blood-red mouth. Its eyes are precious stones.

The idol rests on a throne between its brother Balarama and its sister Subhadra. On festival days, the three are placed on separate cars and pulled through the streets. The car of the Juggernaut is 45 feet high and has 16 wheels. Sometimes careless pilgrims are crushed to death beneath the wheels. It was once believed that these worshippers cast themselves in front of the cars deliberately. But it is now known that a death within the temple or in the god's presence is considered unholy to Hindus.

The word *Juggernaut* is commonly used to mean a heavy, moving force, such as a railroad locomotive or a football fullback.

GEORGE NOEL MAYHEW

JUGGLER OF NOTRE DAME. See **OPERA** (Some of the Famous Operas).

A Juggernaut on wheels moves through a crowd of thousands during a festival parade in the shrine city of Puri, India.

Deane Dickason, Ewing Galloway





Black Star

A Skillful Juggler can keep almost anything in the air from simple balls to large, odd-shaped objects. Maracas produce a slow, rhythmic sound as they circle in the air.

JUGGLING is throwing objects into the air one after the other and catching them rapidly. It is most often done with balls, hoops, or tenpins, using from two to as many as 10 or 12 objects at a time. Suppose the juggler has three tenpins. He throws them into the air one at a time until all three are in motion. As they fall back to the level of his hands, he catches them one by one and again throws them into the air. The process is repeated, and the juggler keeps throwing and catching

the tenpins. Timing is very important in juggling. Any kind of objects may be used. Jugglers often use china plates, bottles, light bulbs, eggs, and other breakable objects.

Juggling also means any trick performed by the skill of the hand or eye. Balancing a stick or a knife on the nose is a form of juggling, and so is balancing two or three round balls on top of one another, or an egg on the end of a soda straw.

The word juggling is sometimes used to describe the action of a person who tries to do something dishonest, especially with money.

ELMER D. MITCHELL

JUGOSLAVIA. See YUGOSLAVIA.

JUGULAR, JUG yoo lur, VEIN is the name of each of four large veins that return blood to the heart from the head and neck. The veins get their name from the Latin word *jugulus*, which means *collarbone*. There are two jugular veins on each side of the neck, known as the *external* and *internal* jugulars. The external jugulars lie close to the surface and carry blood from the outside parts of the head and neck to the heart. The internal jugulars lie deeper and carry blood from the deeper tissues of the neck and from the interior of the skull. The internal jugular veins are much larger than the external, and are the ones commonly referred to. Opening an internal jugular vein usually proves fatal, because of the rapid loss of blood.

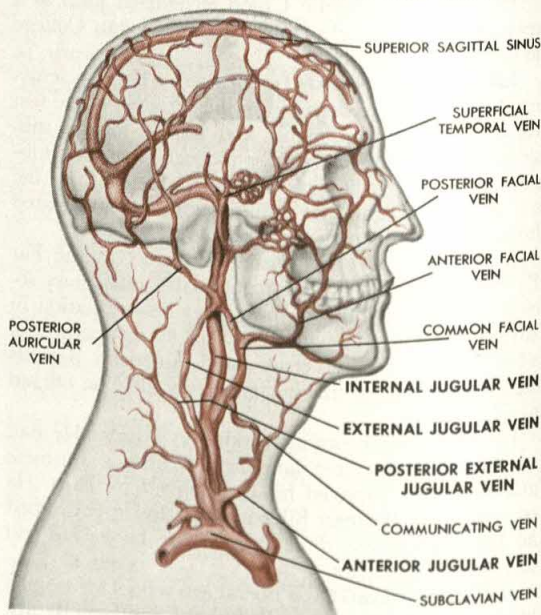
JOHN B. MIALE

JUGUM. See MOTH.

JUILLIARD, JOOL uh YARD, AUGUSTUS (1836-1919), an American merchant, financier, and philanthropist, was an outstanding patron of music. He grew wealthy in the textile business. He gave time and money to cultural enterprises. He served as president of the Metropolitan Opera Company from 1892 until his death, and left his fortune to the Juilliard Musical Foundation (see JUILLIARD SCHOOL OF MUSIC). Juilliard was born at sea to French immigrants.

ROBERT H. BRENNER

Jugular Veins Carry Blood from the Head and Neck.



JUILLIARD MUSICAL FOUNDATION is a corporation that maintains the Juilliard School of Music in New York City. Augustus Juilliard, a textile merchant, left a fortune of between \$5,000,000 and \$20,000,000 to establish the foundation. It was incorporated in 1920 by a special act of the New York State Legislature. The foundation has offices at 70 Broadway, New York 4, N.Y.

JUILLIARD MUSICAL FOUNDATION

JUILLIARD SCHOOL OF MUSIC, in New York City, is a leading American music school. It was established with funds supplied by the Juilliard Musical Foundation which was created by Augustus Juilliard (1836-1919), a textile merchant. He left his fortune to aid the development of American music. The school formerly consisted of the Juilliard Graduate School and the Institute of Musical Art. In 1946, these schools combined under the present name.

MARK SCHUBART

JUJITSU. See JUDO.

JULIAN, *JOOL jun* (A.D. 331-363), was a Roman emperor who was called "The Apostate" because he tried to restore pagan worship. Julian was a nephew of Constantine the Great. He was well-educated. One of his teachers was Eusebius, the Christian bishop of Nicodemia. Julian later studied in Athens under some of the leading philosophers of his time.

Julian successfully led an army against the Alamanni and Franks, barbarian Germanic tribes. He administered Gaul with considerable skill. He was popular with the troops, and in A.D. 360 they proclaimed him emperor.

Julian was an unusually able ruler and did a great deal to improve the empire during his brief reign. He was a patron of the arts and was very tolerant. However, the Christians became angered because he favored pagan gods. Julian died from a wound received in battle against the Persians.

ROBERT GEHLMANN BONE

JULIAN, PERCY LAVON (1899-), is an American chemist, teacher, and industrialist. He wrote on the identification and synthesis of hormones and steroids, the chemical composition of soybean proteins and oil, and the chemical nature of adrenal cortex steroids (see ADRENAL GLAND). He taught chemistry at Fisk, Howard, and DePauw universities. In 1953, he became president of Julian Laboratories, Inc. Julian, a Negro, was born in Montgomery, Ala. He received his Ph.D. from the University of Vienna in 1931.

PAUL R. FREY

JULIAN CALENDAR was devised in 46 B.C. by the order of Julius Caesar. Before that time the Roman religious officials had distorted the calendar so that it differed from the solar year by three months. The Julian calendar divided the year into 12 months alternating from 30 to 31 days, except February which had 29. Every four years February was to have 30 days. To readjust the calendar, three months were added to the year 46 B.C., making it 15 months long. The new year then began on January 1.

Caesar changed the Roman month *Quintilis* to *Julius* (now July) in honor of himself. He made it a 31-day month. Augustus later made his month, August, 31 days long by taking a day from February. The Julian year of 365 $\frac{1}{4}$ days was 11 minutes and 14 seconds longer than the solar year. By 1580, the calendar was 10 days off. Pope Gregory XII corrected it, and developed the Gregorian calendar.

PAUL SOLLENBERGER

See also CALENDAR; GREGORIAN CALENDAR.

JULIUS ROSENWALD FUND

JULIANA, *foo lih AN uh* (1909-), is the Queen of The Netherlands. From early childhood, she was trained to succeed her mother, Queen Wilhelmina. As a young girl, Princess Juliana attended classes daily at the palace with a few other girls of her own age. In her classes, she learned to cook, sew, and skate, just as the other girls did. Later, she attended the University of Leiden and received an honorary degree.

Juliana was made a member of the Council of State when she came of age on her 18th birthday. In 1937, she married Prince Bernhard of Lippe-Biesterfeld. Because German troops occupied The Netherlands during World War II, Juliana and her daughters lived quietly in Canada from 1940 to 1945. Her third child was born there in 1943.

In September, 1948, Queen Wilhelmina abdicated because of ill health, and Juliana became queen, after ruling as regent for several months. She was not crowned, because in The Netherlands the crown belongs to the people. The ceremony is called "enthronement." She took an oath to remain faithful to the constitution of The Netherlands, and the members of the States General swore loyalty to her. JANE K. MILLER



Wide World

Queen Juliana

JULIUS was the name of three popes of the Roman Catholic Church. The dates of their reigns were:

Julius I, Saint	(337-352)
Julius II	(1503-1513)
Julius III	(1550-1555)

Saint Julius I (? -352) is noted chiefly for his firm intervention in the Arian controversy. Pro-Arian eastern bishops had condemned and deposed Saint Athanasius, patriarch of Alexandria, in 335. Julius held a council of bishops and declared Athanasius innocent. In 342 or 343, the pope convened the Council of Sardica, which confirmed the anti-Arian teachings of the Council of Nicaea and again declared Athanasius orthodox (see ARIANISM). The Basilica Julia, now called the Church of the Twelve Apostles, was erected in Rome during Julius' reign.

Julius II (1443-1513) was interested mainly in increasing the temporal power of the papacy. He worked to restore papal sovereignty and to remove foreign intervention from Italy. He joined the League of Cambrai in 1508, and re-formed the Holy League in 1511.

Julius began the construction of St. Peter's Basilica in 1506, and engaged Donato Bramante, Raphael, and Michelangelo to work on it. He was born GIULIANO DELLA ROVERE near Savona. He entered the Franciscan order and was made a cardinal in 1471 when he was 28 years old. He served on diplomatic missions for several popes.

GUSTAVE WEIGEL and FULTON J. SHEEN

JULIUS CAESAR. See CAESAR, GAIVS JULIVS; SHAKESPEARE, WILLIAM (Synopsis of Plays).

JULIUS ROSENWALD FUND. See ROSENWALD FUND, JULIUS.

JULY is the seventh month of the year. It was the fifth month in the calendar of the ancient Romans. They named it *Quintilis*, which means *fifth*. Julius Caesar was born during this month. When he re-adjusted the calendar, moving the first of the year from March 1 to January 1, he named the month for himself. He also gave it 31 days. In most countries in the Northern Hemisphere, July is usually the hottest month of the year. In the Southern Hemisphere, July is wintertime. Except for cold Antarctica and the cold rainy part of South America, the climate is mild in most countries south of the equator during July.

IMPORTANT JULY EVENTS

- 1 Comte de Rochambeau, French commander in the Revolutionary War in America, born 1725.
- Battle of Gettysburg began, 1863.
- The British North America Act went into effect, establishing the Dominion of Canada, 1867.
- American troops occupied San Juan Hill, 1898.
- George Sand, French novelist, born 1804.
- Louis Blériot, French aviator, born 1872.
- Battles of the Somme began in World War I, 1916.

- 2 President James Garfield shot, 1881.

—Sherman Anti-Trust Act passed, 1890.

—Composer Christoph Gluck, born 1714.

—Sir William Bragg, English physicist, born 1862.

- 3 Champlain founded Quebec, 1608.

—Furniture designer Robert Adam born 1728.

—John S. Copley, American painter, born 1738.

—Henry Grattan, Irish statesman, born 1746.

—Composer George M. Cohan born 1878.

—Idaho became the 43d state, 1890.

- 4 Continental Congress adopted the Declaration of Independence, and John Hancock signed it, 1776.

—Nathaniel Hawthorne, American author, born 1804.

—Giuseppe Garibaldi, Italian patriot, born 1807.

—Work began on the Erie Canal, 1817.

—Stephen Foster, American song writer, born 1826.

—Vicksburg surrendered to the Union Army, 1863.

—Calvin Coolidge, 30th President of the United States, born at Plymouth Notch, Vt., 1872.

—First Pacific cable, running between San Francisco and Manila, opened by President Theodore Roosevelt, 1903.

—The Philippines celebrated its official independence, 1946.

- 5 David G. Farragut, Union admiral during Civil War, born 1801.

—P. T. Barnum, American circus owner, born 1810.

—Venezuela declared its independence, 1811.

—Cecil Rhodes, English statesman and diamond king, born 1853.

—National Labor Relations Board set up, 1935.

- 6 John Huss burned at the stake, 1415.

—John Paul Jones, American naval hero, born 1747.

—British troops captured Fort Ticonderoga, 1775.

—The Republican party held its first state convention, at Jackson, Mich., 1854.

Activities. In the northern half of the world, grass and leaves often lose their greenness if there is little rain. But some flowers thrive on the heat and are most brilliant during July. The air is full of the hum of insects, and birds dart everywhere in search of food. July is a month of abundant life.

Special Days. In the United States, Independence Day is celebrated on July 4. On that day in 1776, the Continental Congress adopted the Declaration of Independence. In France, a similar holiday, Bastille Day, occurs on July 14.

Several other countries celebrate national independence in July. Canada celebrates July 1 as Dominion Day. Independence day in the Philippines is also on July 4;

- 7 Gustav Mahler, Bohemian composer, born 1860.

—Opera composer Gian Carlo Menotti, born 1911.

—Japanese and Chinese troops clashed, beginning the struggle that became World War II, 1937.

- 8 Count von Zeppelin, German inventor, born 1838.

—John D. Rockefeller born 1839.

- 9 Braddock defeated near Fort Duquesne, 1755.

—Argentina declared its independence, 1816.

—Elias Howe, American inventor, born 1819.

—Electrical pioneer Nikola Tesla born 1856.

—H. V. Kaltenborn, news analyst, born 1878.

—Italian composer Ottorino Respighi born 1879.

- 10 Protestant leader John Calvin born 1509.

—English lawyer Sir William Blackstone born 1723.

—J. A. M. Whistler, American painter, born 1834.

—American humorist Finley Peter Dunne born 1867.

—Wyoming became the 44th state, 1890.

- 11 Robert Bruce, king of Scotland, born 1274.

—John Q. Adams, sixth President of the United States, born at Braintree (now Quincy), Mass., 1767.

—Aaron Burr mortally wounded Alexander Hamilton in duel, 1804.

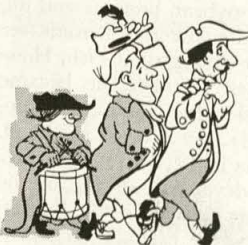
—John Wanamaker, American merchant, born 1838.



JAMES GARFIELD



JOHN QUINCY ADAMS



- 12 Julius Caesar, Roman general, born 100? B.C.

—Porcelain maker Josiah Wedgwood born 1730.

—Author Henry D. Thoreau born 1817.

—Canadian physician Sir William Osler born 1849.

—Inventor George Eastman born 1854.

—Author Oscar Hammerstein II born 1895.

- 13 Northwest Ordinance adopted, 1787.

—Sidney Webb, English economist, born 1859.

—Mary Emma Woolley, American educator, born 1863.

- 14 Cardinal Mazarin, French statesman, born 1602.

—Citizens stormed the Bastille at the beginning of the French Revolution, 1789.

—Matthew Perry presented President Fillmore's letter to the Emperor of Japan, 1853.



CALVIN COOLIDGE



in Venezuela, July 5; in Argentina, July 9; in Belgium, July 21; in The Netherlands, July 25; and in Peru, July 28.

Symbols. The special flower for July is the water lily. The ruby is the gem for July.

GRACE HUMPHREY

Quotations

Then came hot July, boiling like to fire,
That all his garments he had cast away.

Edmund Spenser

The summer looks out from her brazen tower,
Through the flashing bars of July.

Francis Thompson

If the first of July be rainy weather,
It will rain, more or less, for four weeks together.
English Proverb

Hot July brings cooling showers,
Apricots and gillyflowers.

Sara Coleridge

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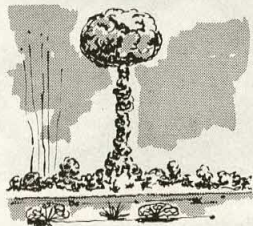
Bastille	Calendar	Ruby
Bastille Day	Dominion Day	Summer
British North	Independence Day	Water Lily
America Act	Liberty, Statue of	

IMPORTANT JULY EVENTS

- 14 Owen Wister, American novelist, born 1860.
- 15 Inigo Jones, English architect, born 1573.
- Rembrandt, Dutch painter and etcher, born 1606.
- Clement Moore, American author who wrote "A Visit from Saint Nicholas," born 1779.
- Manitoba became a province of Canada, 1870.
- Second Battle of the Marne began, 1918.
- 16 Andrea del Sarto, Italian painter, born 1486.
- English painter Sir Joshua Reynolds born 1723.
- First mission in California established at San Diego by Father Junípero Serra, 1769. ▼

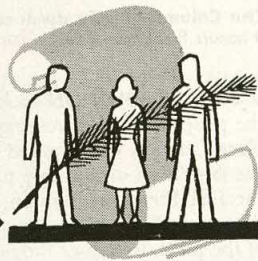


- District of Columbia established, 1790.
- Mary Baker Eddy, founder of the Christian Science movement, born 1821.
- Roald Amundsen, Norwegian explorer, born 1872.
- Scientists set off the first atomic bomb, Alamogordo, N. M., 1945.
- 17 Financier John Jacob Astor born 1763.
- Spain formally transferred Florida to the United States, 1821.
- 18 W. M. Thackeray, English author, born 1811.
- Allies began offensive on Western Front, 1918.
- Spanish Civil War began, 1936.
- 19 Samuel Colt, firearms inventor, born 1814.
- Edgar Degas, French painter, born 1834.
- First woman's rights convention in United States met at Seneca Falls, N.Y., 1848.
- France declared war on Prussia, 1870.

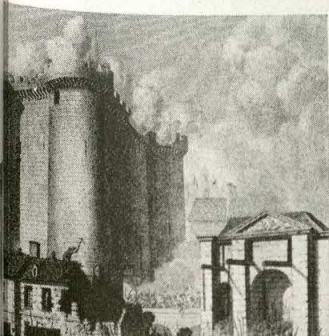


- 20 Francesco Petrarch, Italian poet, born 1304.
- British Columbia became a Canadian province, 1871.
- Louis Riel went on trial for treason at Regina, Sask., 1885.
- German generals tried to kill Hitler, 1944.
- 21 English attacked the Spanish Armada, 1588.
- Belgium declared its independence, 1831.

- 21 First Battle of Bull Run, 1861.
- Ernest Hemingway, Nobel prize author, born 1899.
- 22 Austrian botanist Gregor Mendel born 1822.
- Battle of Atlanta, 1864.
- Stephen Vincent Benét, American poet, born 1898.
- 23 Charlotte Cushman, American actress, born 1816.
- The Mormons reached the Great Salt Lake, 1847.
- Third Pan-American conference convened, 1906.
- 24 The British took Gibraltar, 1704.
- Liberator Simón Bolívar born 1783.
- Author Alexandre Dumas the Elder born 1802.
- Composer Ernest Bloch born 1880.
- Amelia Earhart, American aviator and first woman to fly the Atlantic, born 1898.
- 25 The Netherlands declared its independence, 1581.
- George Stephenson first successfully demonstrated a steam locomotive, 1814.
- Arthur Balfour, English statesman, born 1848.
- Louis Blériot made first flight across the English Channel, 1909.
- Puerto Rico became a commonwealth, 1952.
- 26 New York ratified the Constitution, 1788.
- Playwright George Bernard Shaw born 1856.
- Carl Jung, Swiss psychologist, born 1875.
- Egypt seized the Suez Canal, 1956.
- 27 Bank of England incorporated, 1694.
- The first permanent Atlantic cable completed, 1866.
- Korean War ended, 1953.
- 28 Camille Corot, French painter, born 1796.
- Peru declared its independence, 1821.
- Amendment 14, defining U.S. citizenship, proclaimed, 1868.
- Austria-Hungary declared war on Serbia, beginning World War I, 1914.



- 29 Alexis de Tocqueville, author of *Democracy in America*, born 1805.
- Author Alexandre Dumas the Younger born 1824.
- Booth Tarkington, American novelist, born 1869.
- William Beebe, American explorer, naturalist, and writer, born 1877.
- Benito Mussolini, Italian dictator, born 1883.
- 30 First representative assembly in America convened in Jamestown, 1619.
- American social scientist Thorstein Veblen born 1857.
- Henry Ford, American automobile manufacturer, born 1863.
- 31 Christopher Columbus discovered the island of Trinidad, 1498.
- First patent in United States registered, 1790.
- John Ericsson, Swedish inventor, born 1803.





Black Star

The Column of July stands on the site of the Bastille in Paris. It honors Frenchmen killed in the July Revolution of 1830.

JULY REVOLUTION took place in July, 1830, when the people of France rose against their king, Charles X. King Charles, who wanted to bring the throne back to the condition of absolute monarchy it had held before the first French revolution, issued a series of July Ordinances. These were designed to restrict the freedom of the press, to reduce the number of voters, and to take away the power of the legislature. People of all classes rebelled, and forced Charles to abdicate the throne and flee to England.

The revolutionists gave the crown to Louis Philippe, Duke of Orléans. Louis Philippe was a bourgeois, or middle class, king rather than an aristocratic king, as Charles X had been. The lower house in the French legislature received supreme power in the government, but it was elected only by those citizens who had high property qualifications. Great opposition arose against the *July Monarchy*, as Louis' reign was called. The workers, who were left without the right to vote, opposed it.

The influence of the July Revolution affected all Europe. In The Netherlands, the Belgians revolted and declared themselves independent of Dutch rule.

As a memorial to the 651 citizens killed in the July

Revolution, a pillar of bronze called the Column of July was erected in Paris. The pillar stands on the site of the Bastille, famous in the French Revolution (see **BASTILLE**). The names of the dead are carved on the column, and their bodies lie in the vaults below. Here also lie the bodies of the men and women who fell in the revolution of 1848.

J. SALWYN SCHAPIRO

See also **CHARLES (X)** of France; **LOUIS PHILIPPE**.

JUMBO. See **BARNUM**, **PHINEAS TAYLOR**.

JUMEL MANSION. See **NEW YORK CITY** (Architecture).

JUMNA, *JUM nuh*, **RIVER**, in northern India, forms one of the most important branches of the Ganges River. The Jumna rises in the Himalaya Mountains and flows southeastward for almost 900 miles. It empties into the Ganges at the city of Allahabad. Two canals, one leading westward from the Jumna and the other leading eastward, irrigate about 12,000 square miles of farm land in the river valley.

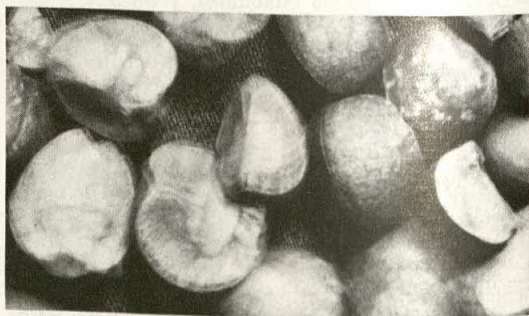
ROBERT J. CRANE

JUMPING. See **TRACK AND FIELD**.

JUMPING BEAN gets its name because it jumps and rolls from side to side. Its movement is caused by the full-grown larva of a certain gypsy moth named *Carpocapsa saltitans*, which lives inside the bean. When the larva moves, the bean "jumps." Jumping beans belong to the spurge family and grow in Central and South America. They appear somewhat three-cornered in shape. Americans call them *Mexican jumping beans*, and people in the Southwest sometimes call them *broncho beans* because of the way they jump. These beans have no known value except as a novelty.

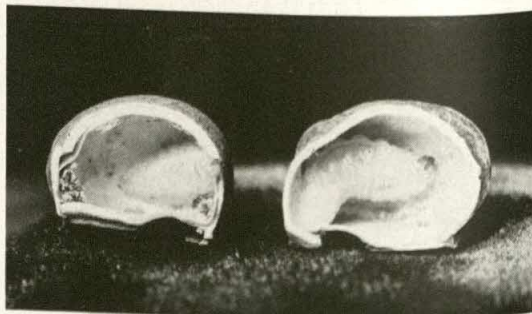
Scientific Classification. Jumping beans belong to the family *Euphorbiaceae*.

ARTHUR J. PRATT



ROSS E. HUTCHINS

Mexican Jumping Beans, above, are known in Mexico as leapers. A caterpillar, below, lives in each bean. By grasping the silken wall of the bean with its legs and vigorously snapping its body, the caterpillar moves its house several inches at a time.





H. H. Pittman

The Jumping Mouse of North America Uses Its Extremely Long Tail to Balance Itself When It Leaps.

JUMPING FROG JUBILEE. See CALIFORNIA (Annual Events).

JUMPING MOUSE is a name given to several field mice which hibernate during the winter. They are one of the most interesting species of mice that live in North America. The first record of the jumping mouse dates from the late 1800's. People then called it the "Long-legged Mouse of Hudson's Bay." Jumping mice have a brownish color and black specks. The hind legs of the jumping mouse are longer than those of most mice, and they have extremely long tails.

Jumping mice usually live in meadows, dense fields, and thickets near the edges of woods. They particularly like to live in damp places. During the harvest season they may often be seen leaping like frogs, sometimes jumping 10 feet at a leap. Like kangaroos, they use their long tails to help them jump. The mouse uses his jumping ability for protection. At the slightest sign of danger, the mouse will take a flying leap. If a jumping mouse loses its tail, or part of it, it cannot jump as well, and may lose its sense of balance.

These mice live in nearly all parts of North America from the Bering Sea in the far north, to North Carolina and New Mexico in the south. They are similar to jerboas.

Scientific Classification. Jumping mice are members of the family *Zapodidae*. The best known are genus *Zapus*, species *hudsonius*.

STANLEY P. YOUNG

See also JERBOA; WHITE-FOOTED MOUSE.

JUNCO, *JUNG koh*, is a small bird related to the finch and sparrow. The slate-colored junco, or snowbird, ranges between Canada, New England, and the Gulf of Mexico. It is about 6½ inches long, and has a slate-gray back and breast, white belly, and white outer tail feathers. The white-winged junco and the gray-headed

junco are often seen in the Rocky Mountain states.

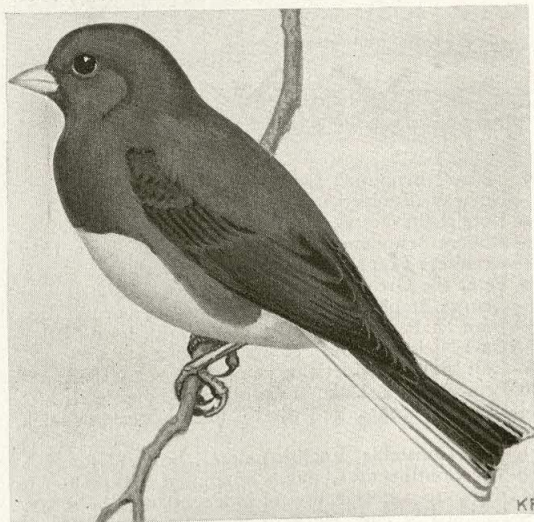
The junco, a useful bird, feeds on weed seeds and caterpillars and other insects. It nests beneath overhanging banks. The female lays three to five bluish white eggs. Juncos breed in northern evergreen forests.

Scientific Classification. Juncos are members of the family *Fringillidae*. The slate-colored junco is classified as genus *Junco*, species *hyemalis*. The white-winged junco is *J. aikeni*.

GEORGE J. WALLACE

See also FINCH.

The Slate-Colored Junco Is a Common Winter Bird in the northern part of the United States. On even the coldest, snowiest days it flits about gathering seeds for food.



JUNE is the sixth month of the year. It was the fourth month in the early Roman calendar, and once had 29 days. When Julius Caesar reformed the calendar, he gave the month 30 days and made it the sixth month. Some authorities believe the Romans named the month for Juno, the patron goddess of marriage. The month of June was dedicated to young men in Rome, and some people believe that the name was taken from *juniores*, the Latin word for *young men*.

Spring ends and summer begins around June 21 or 22 in the Northern Hemisphere. Trees and shrubs are often at their freshest, and there are more flowers during June than at any other time. June is especially the month of roses. In the Southern Hemisphere, fall ends and winter

begins during this month, bringing cold, rainy weather.

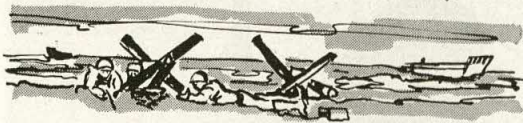
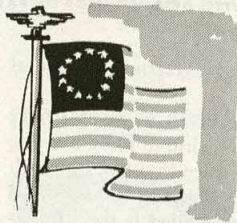
Activities. When June comes, fruit blossoms have had their day, and in some regions green fruit is just beginning to appear. Bees move from flower to flower, gathering nectar. "A swarm of bees in June is worth a silver spoon," says an old rhyme. Baby birds of some species have hatched in some regions, and their parents are kept busy bringing them food.

From early Roman times, June was believed to be the best time for marriages, and it is still a popular month for weddings.

Special Days. The United States celebrates Flag Day on June 14, commemorating the day in 1777 when the Continental Congress adopted the Stars and Stripes as the flag of the United States. It then had only thirteen stars, to match its thirteen stripes. See FLAG DAY.

IMPORTANT JUNE EVENTS

- 1 Jacques Marquette, French explorer, born 1637.
 - Kentucky became the 15th state, 1792.
 - Tennessee became the 16th state, 1796.
 - English poet John Masefield born 1878.
 - John Drinkwater, English playwright, born 1882.
- 2 John Randolph of Roanoke, American statesman, born 1773.
 - Thomas Hardy, English novelist, born 1840.
 - Sir Edward Elgar, English composer, born 1857.
- 3 De Soto claimed Florida for Spain, 1539.
 - Dutch West India Company chartered, 1621.
 - Jefferson Davis, American statesman, born 1808.
 - King George V of Great Britain born 1865.
 - Singer Roland Hayes born 1887.
- 4 King George III of Great Britain born 1738.
 - Battle of Midway began, 1942.
 - Rome fell to the Allies, 1944.
- 5 Socrates, Greek philosopher, born 469 B.C.
 - Adam Smith, Scottish economist, born 1723.
 - First public balloon ascent, France, 1783.
 - Secretary of State George C. Marshall described the *Marshall Plan*, 1947.
- 6 Velázquez, Spanish painter, born 1599.
 - Nathan Hale, American patriot, born 1755.
 - Louis Antoine Godey, publisher of *Godey's Lady's Book*, born 1804.
 - YMCA organized in London, 1844.
 - Thomas Mann, German novelist and Nobel prize winner, born 1875.
 - Allied troops landed in Normandy on D-Day, 1944.
- 7 "Beau" Brummel, English dandy, born 1778.
 - Norway dissolved union with Sweden, 1905.
- 8 Robert Stevenson, Scottish engineer, born 1772.
 - Robert Schumann, German composer, born 1810.
 - Architect Frank Lloyd Wright born 1869.
- 9 Peter the Great, Czar of Russia, born 1672.
 - George Stephenson, English inventor, born 1781.
 - John H. Payne, American playwright, born 1791.
 - Carl Nielsen, Danish composer, born 1865.
 - Cole Porter, American composer, born 1893.
- 10 Prince Philip, Duke of Edinburgh, born 1921.
 - German troops destroyed Lidice, Czechoslovakia, 1942.
- 11 John Constable, English painter, born 1776.
 - The Continental Congress appointed a committee to draw up a declaration of independence, 1776.
 - Richard Strauss, German composer, born 1864.
- 11 Yukon Territory organized, 1898.
- 12 Charles Kingsley, English novelist, born 1819.
 - Sir Oliver Lodge, English physicist, born 1851.
- 13 Winfield Scott, American general, born 1786.
 - First Canadian Parliament opened, Ottawa, 1841.
 - William Butler Yeats, Irish poet, born 1865.
 - Carlos Chávez, Mexican composer, born 1899.
 - "Red" Grange, football hero, born 1903.
- 14 Continental Congress adopted the Flag, 1777.
 - Harriet Beecher Stowe, author of *Uncle Tom's Cabin*, born 1811.
 - Hawaii organized as a territory, 1900.
 - Photographer Margaret Bourke-White born 1906.
 - John Alcock and Arthur Brown made first nonstop transatlantic flight, America to Ireland, 1919.
- 15 King John granted Magna Carta, 1215.
 - First Anglican Church worship in Boston, 1686.
 - Benjamin Franklin proved that lightning is electricity, 1752.
 - George Washington appointed commander in chief of Continental Army, 1775.
 - Arkansas became the 25th state, 1836.
 - Edvard Grieg, Norwegian composer, born 1843.
 - Charles Goodyear was granted a patent for rubber vulcanization, 1844.
 - Singer Ernestine Schumann-Heink born 1861.
 - Composer Robert Russell Bennett born 1894.
- 16 Singer Helen Traubel born 1903.
- 17 Father Jacques Marquette and Louis Joliet began exploring the Mississippi River, 1673.
 - Battle of Bunker Hill, 1775.
 - Charles Gounod, French composer, born 1818.
 - Composer Igor Stravinsky born 1882.
 - Charles Eames, American designer, born 1900.
 - Reclamation Act passed by Congress, 1902.



Sweden celebrates its flag day on June 6, and Finland on June 24.

June Symbols. The special flower for June is the rose. The pearl is the gem for June.

GRACE HUMPHREY

Quotations

And what is so rare as a day in June?

Then, if ever, come perfect days;
Then Heaven tries earth if it be in tune,
And over it softly her warm ear lays;
Whether we look, or whether we listen,
We hear life murmur, or see it glisten.

James Russell Lowell

I knew that you were nearing, June, and I knew that you were nearing—
I saw it in the bursting buds of roses in the clearing;

The roses in the clearing, June, were blushing pink and red,
For they had heard upon the hills the echo of your tread.

Douglas Mallock

No price is set on the lavish summer;
June may be had by the poorest comer.

James Russell Lowell

Then let us, one and all, be contented with our lot;
The June is here this morning, and the sun is shining hot;
Oh! let us fill our hearts up with the glory of the day,
And banish ev'ry doubt and care and sorrow far away.

James Whitcomb Riley

See also CALENDAR; FLAG DAY; PEARL; ROSE; SUMMER.

IMPORTANT JUNE EVENTS

- 17 John Hersey, American novelist, born 1914.
- 18 Congress declared war on Great Britain, 1812.
—The Allies under Wellington and Blücher defeated Napoleon at the Battle of Waterloo, 1815.



- 19 Blaise Pascal, French scientist, born 1623.
—Statue of Liberty arrived from France, 1885.
- 20 Congress adopted the design for the Great Seal of the United States, 1782.
—Eli Whitney successfully demonstrated the cotton gin, 1793.
—Composer Jacques Offenbach born 1819.
—Victoria became queen of Great Britain, 1837.
—West Virginia became the 35th state, 1863.
—President Andrew Johnson announced the purchase of Alaska from Russia, 1867.
—Aviator Alberto Santos-Dumont born 1873.
- 21 Daniel Carter Beard, founder of Boy Scouts of America, born 1850.
—New Hampshire ratified the Constitution, 1788.
—Cyrus McCormick granted patent for reaper, 1834.
—Rockwell Kent, American artist, born 1882.
—U.S. forces captured Okinawa, 1945.
- 22 Napoleon I abdicated, 1815.
—Julian Huxley, British biologist, born 1887.
—Author Anne Morrow Lindbergh born 1907.
—France surrendered to the Germans, 1940.
—“GI Bill of Rights” became law, 1944.
- 23 William Penn signed treaty with Indians, 1683.
—Carl Milles, Swedish sculptor, born 1875.
—Humorist Irvin S. Cobb born 1876.
—King Edward VIII of Great Britain born 1894.
—Taft-Hartley Act became law, 1947.
- 24 Chemist E. I. du Pont born 1771.
—Clergyman Henry Ward Beecher born 1813.
—American packer Gustavus Swift born 1839.



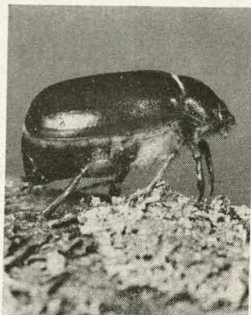
- 25 Sioux Indians massacred Col. George Custer and his troops at the Little Big Horn, Montana, 1876.
—Fair Labor Standards Act became law, 1938.
—North Korean troops attacked South Korea, beginning the Korean War, 1950.
—Virginia ratified the Constitution, 1788.
- 26 William Thomson, Lord Kelvin, British physicist, born 1824.
—Pearl S. Buck, Nobel prize novelist, born 1892.
—United Nations Charter signed by delegates from 50 nations at San Francisco, 1945.



- 27 Charles Parnell, Irish patriot, born 1846.
—American poet Paul L. Dunbar born 1872.
—Helen Keller, deaf and blind author and lecturer, born 1880.
- 28 King Henry VIII of England born 1491.
—John Wesley, founder of Methodism, born 1703.
—French writer Jean Jacques Rousseau born 1712.
—Carl Spaatz, American air pioneer, born 1891.
- Archduke Francis Ferdinand of Austria and his wife assassinated, touching off World War I, 1914.
—Treaty of Versailles signed, 1919.
- 29 Peter Paul Rubens, Flemish painter, born 1577.
—Townshend Acts passed, 1767.
—Sir Henry Morton Stanley, African explorer, born 1841.
—George W. Goethals, American engineer who built the Panama Canal, born 1858.
—George E. Hale, American astronomer, born 1868.
—Parliament authorized Canada to establish new provinces, 1871.
- 30 Territory set aside for Indians west of the Mississippi River, 1834.
—Walter Hampden, American actor, born 1879.
—Pure Food and Drug Act became law, 1906.

JUNE BUG

JUNE BUG, or **MAY BEETLE**, is a name for several large brown beetles often seen in the United States during May and June. They are related to the ancient scarab beetles of Egypt, which were considered sacred. June bugs are usually seen at night when light attracts them.



Lynwood M. Chace

June Bugs often cause damage by stripping the young leaves from trees and shrubs.

They feed on roots of corn, grains, grasses, and vegetables. They come out in May or June as adult beetles.

Scientific Classification. June bugs belong to the family *Scarabaeidae* in the order *Coleoptera*. The most common June bug in the United States is genus *Lachnosterna*, species *fusca*.

H. H. ROSS

See also **SCARAB**.

JUNE GRASS. See **BLUEGRASS**.

JUNEAU, *JOO noh*, Alaska (pop. 6,797; alt. 100 ft.),

the state capital, nestles at the base of Mt. Juneau in southeastern Alaska. It lies on the mainland side of the Gastineau Channel. For location, see **ALASKA** (color map). It is one of Alaska's most important ports. The city's chief industries center around fishing and the outfitting of boats. Juneau also has many of the cold-storage facilities that handle Alaska's fish production. Surrounding timberlands provide a supply of spruce and hemlock for the city's sawmill.

Juneau serves as headquarters for many federal activities in Alaska. A five-story building houses most of the state offices. A mayor-council system governs the city.

Many tourists visit Juneau because of its picturesque location and the surrounding scenery. The city provides easy access to several fiords along the Gastineau Channel, and to the Mendenhall Glacier near the municipal airport. The Alaska Historical Museum and Library also attracts many visitors.

Juneau was founded during a gold rush in 1880. The city gets its name from a prospector, Joe Juneau, who discovered gold in the area. For many years, gold mining was Juneau's chief activity. However, the wide gap between labor costs and the price of gold idled mining operations after World War II.

JUNEAU, SOLOMON LAURENT. See **MILWAUKEE** (History).

JUNG, *yoong*, **CARL GUSTAV** (1875-1961), a Swiss psychologist and psychiatrist, developed analytical psychology. This system of looking at personality is similar to psychoanalysis, particularly in its emphasis on the roles of conscious and unconscious processes as they influence behavior. By emphasizing man's racial origins,

Steep Mountains Tower over Juneau and Its Fine, Deep Harbor. Juneau Is Located in Alaska's Panhandle.

Three Lions





Pantheon

C. G. Jung

Jung stimulated the study of primitive man and his mythology as an aid to understanding the human personality. Jung adapted the use of the free association technique to the study of personal problems, and invented the terms *introvert* and *extrovert* to describe types of personalities (see EXTROVERT; INTROVERT; PSYCHOANALYSIS).

Jung was born in Basel, and studied medicine there. Later, he became interested

in psychiatry. He was influenced at first by the teachings of Sigmund Freud, but later developed his own theories. Jung's explanation of behavior placed more emphasis on the development of mankind and on vital forces within the individual, rather than the sex urges alone. He became a professor at the University of Basel in 1943. The C. G. Jung Institute, which carries on research and trains psychoanalysts, was opened in Zurich in 1948.

KENNETH E. CLARK

JUNGFRAU, *YOONG frow*, a famous mountain, rises 13,668 feet above sea level in the Bernese Alps of Switzerland. It lies about 12 miles south of Interlaken, a well-known resort. The name *Jungfrau* means *maiden* in German. For location, see SWITZERLAND (color map).

The peak was first reached in 1811. The Jungfrau is part of a rocky, sharp-edged, circular ridge enclosing several glaciers that unite to form the Aletsch Glacier. An electric railway carries tourists to the 11,333-foot-high Jungfraujoch, a flat area in the ridge. The railway can be reached from Lauterbrunnen on the east, or Grindelwald to the west.

FRANKLIN C. ERICKSON

See also ALPS; MOUNTAIN (table; color picture, Mountains of the World).

JUNGLE is the name for the thick forests of hot and humid tropical regions. One third of the world's usable land, or 15 million square miles, is jungle. Dense underbrush usually covers the ground in these forests. The largest jungles are in Central America, the Amazon region of South America, the East Indies, southern Asia, and the Congo region of Africa.

Jungles are among the least livable places on earth. Poisonous plants, snakes, and wild animals thrive in them. The jungle climate promotes bacteria, insects, and disease, and the frequent, heavy rains wash fertility from the soil. The people who live in jungles often have a low standard of living. They usually live together in tiny villages of thatched huts, surrounded by log stockades that protect them from wild animals and attacks by other jungle tribes. They hunt and fish for most of their food, and supplement this diet with wild berries and fruit. Their lives are constantly threatened by disease and disaster.

Jungles often contain much mineral and vegetable wealth, such as uranium and wild rubber. Because of this, scientists are now studying ways to master these wild regions.

WILLIAM C. BEAVER

JUNGLE BOOK. See KIPLING, RUDYARD.

JUNGLE FOWL is the name of a group of birds that live in southern Asia and the East Indies. They are the



Bureau of Animal Industry

The Female Jungle Fowl Has a Brown Color that blends with forest colors, and makes it easy for the bird to hide. It is an ancestor of our domestic chicken.

ancestors of present-day domestic chickens. Jungle fowl are common in India. They run with great speed, fly rather high, and roost in trees. The hen's cackle sounds much like that of our domesticated fowls, but the cock crows like a bantam rooster.

The wild red jungle fowl lives mostly in mountain forests near small villages. It lives in bamboo thickets, but often mingles with domesticated birds. Unlike domestic fowl, the male takes only one hen for its mate. Males are orange-red and shiny green in color. The females are a spotted brown, and often are hard to see. They hatch eggs in a simple hole or hollow in the ground in the forest.

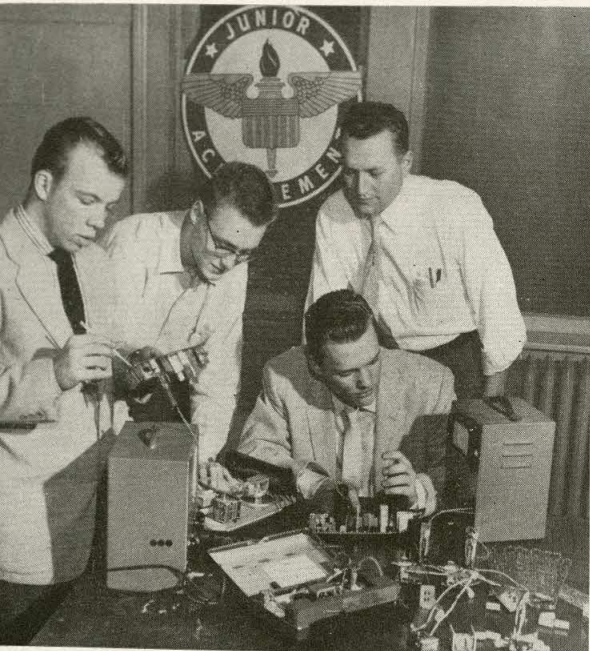
JOSEPH J. HICKEY

See also FOWL.

JUNGLE GARDEN, McKEE. See FLOWER (Famous Flower Gardens).

JUNGLE ROT is a term for any fungus infection of the skin. Doctors usually do not use this term. But it is often used by persons who live in tropical regions. Jungle rot is not a specific disease caused by a special organism. It does not occur only in jungles. Any fungus disease of the skin that seems aggravated by the heat and humidity of tropical climates can be called jungle rot.

JUNIATA COLLEGE is a coeducational liberal arts school at Huntingdon, Pa. It is affiliated with the Church of the Brethren. Juniata offers courses in engineering, technology, and forestry in connection with three other universities. A local radio station provides broadcasting experience. Juniata was founded in 1876. For enrollment, see UNIVERSITIES AND COLLEGES (table).



Junior Achievement of Chicago

A Junior Achievement Adviser supervises the work of three students assembling a portable radio which their company sells.

JUNIOR ACHIEVEMENT, INC., is an organization that gives young persons practical training and experience in modern business methods. Members form their own miniature corporations to make and sell a product or a service. The purpose of Junior Achievement is to provide business laboratories where students may learn how well economic theories work. Students between the ages of 15 and 21 may take part. Junior Achievement, Inc., is sponsored by business and industrial firms.

Members of a Junior Achievement company first develop an idea for a desirable product or service. Then they set up a miniature corporation to market this product or service. They sell shares for a small amount, such as 50 cents each. All workers in each company must also be shareholders. They keep records, pay themselves small wages, and run their businesses. At the end of the school year, they must dissolve their corporations and divide their capital and profit among the shareholders.

Junior Achievement functions in many cities in the United States. Community programs are conducted by local business, labor, and civic leaders. "Business centers," where students may organize and operate their own companies, are set up and supervised by small professional staffs.

Many miniature companies produce such items as radios or leather, plastic, wood, and metal articles. Others publish newspapers or magazines, operate banks, or produce radio and television shows.

Awards and scholarships are given to outstanding Junior Achievement student businessmen by business and industrial organizations.

The Junior Achievement movement was founded in Springfield, Mass., in 1919 by Horace A. Moses, a paper manufacturer. National headquarters are at 500 Fifth Avenue, New York, N.Y.

LAURENCE C. HART

JUNIOR CHAMBER OF COMMERCE, UNITED STATES, also known as *Jaycees*, is an organization of men from 21 to 35 years of age who are interested in leadership training through civic improvement. Members come from all walks of life. About 3,700 local Junior Chambers and 51 state-wide groups have been organized in all parts of the United States. Membership totals about 208,000. Organizations have also been formed in other countries.

The national organization was founded in St. Louis in 1920. It was patterned after a successful local group of young men in St. Louis, who had organized four years earlier. The new group resolved to remain nonreligious and nonpolitical in its activities, and to promote cooperation among the young men's business and civic organizations of the country.

Official Jaycee publications include the monthly *Future*, for all members, and the monthly *Action*, for officers and directors. National headquarters are at Boulder Park, Box 7, Tulsa, Okla.

ROLAND TIBBETTS

See also CHAMBER OF COMMERCE.

JUNIOR COLLEGE is an institution of higher learning that does not offer a bachelor's degree. However, junior colleges do grant degrees, usually either an associate in arts or an associate in science. Two years of work are usually required.

Programs. Junior colleges offer a variety of programs, that can be divided into four general groups. They may offer (1) two years of general education; (2) two years of college work that can be transferred for credit to a four-year college; (3) special programs that prepare the student for a semiprofessional or technical career; and/or (4) programs for adult education. A junior college may offer more than one of these programs at the same time. In general, one junior college differs from another in the amount of career preparation it provides. Some institutions have many career programs, but others have few or none at all.

Junior colleges help the community and its members in many ways. In many cases, persons can continue their education only if a college is located nearby. Many adults, for example, can take courses at night. Most of them would never be able to leave their homes or jobs to attend school unless the junior college were there to serve them. Today, adults make up over a third of all junior college students.

Many junior colleges cooperate with business, industry, and government, by offering special courses. In this way, persons receive specialized training that allows them to obtain better jobs in the community. About one ninth of all junior college students take some kind of special education.

Junior colleges also take much of the burden off four-year colleges. This allows the four-year colleges to concentrate on the final two years of education in which specialization usually takes place. During this first two years, the junior college also helps to prepare its students for the rigorous training ahead. Sometimes, students find that they do not need, or are not suited to, a complete college education.

Junior colleges also save the taxpayer much money, because they do not require as much expensive equipment or as many buildings as a four-year college. They do not need dormitories or large laboratory or research equipment. Junior colleges often share facilities, such

as auditoriums and athletic fields, that already exist in nearby high schools.

Public Junior Colleges enroll about 90 per cent of all the students attending junior colleges. They receive their support from tax money contributed either by the city or the state. In some cases, junior colleges operate as a part of the local school system. Many of these local institutions are called *community colleges*. Most students live in the community surrounding the college. Some junior colleges operate as separate institutions, and have their own board of trustees. Many junior colleges are governed by the state.

Private Junior Colleges are usually administered by church groups or independent boards of trustees. A few of these colleges have individual owners who operate the school for profit. Private junior colleges, like private liberal arts colleges, draw many of their students from areas outside the community.

History. Junior colleges have grown rapidly, mainly because of the great public demand for education beyond the high school level. In 1900, there were only eight such colleges. All were privately owned, and had a total enrollment of about 100 students. By 1925, there were about 325 junior colleges, with an enrollment of about 35,000 students. Junior colleges became firmly established as a part of American education after World War II. In the late 1950's, there were about 500 junior colleges in the United States. Canada has about 40 junior colleges. The average junior college is much smaller than most state colleges and universities. It has an enrollment of about 300 students. RALPH R. FIELDS

JUNIOR HIGH SCHOOL usually includes the seventh, eighth, and ninth grades of a 12-year program of education. Some junior high schools have only the seventh and eighth grades, because adequate space is not available for all three grades.

The *6-3-3 plan* of school organization is popular in the United States. In this plan, six grades of elementary school are followed by three grades of junior high school and three years of senior high school. The United States has more than 5,000 separate junior high schools. There are also about 10,100 six-year schools, usually called *junior-senior* high schools. Smaller communities that cannot afford separate junior high schools often have six-year schools. Junior high schools including grades seven, eight, and nine are usually found in more populous areas.

Junior high schools have two main purposes: (1) to provide a program of education that is adapted to the needs and interests of young adolescents, and (2) to provide smooth progress from elementary school to senior high school. A good junior high school has an educational program that provides many advantages, including the following.

1. It is better adapted than the eight-year elementary school to the needs of young adolescents.

2. It provides an earlier introduction to some high-school subjects such as commerce, science, and industrial arts.

3. It offers beginning courses in music, art, home-making, industrial arts, speech, science, and typing that aid students in selecting their major areas of interest for further study.

4. It provides teachers especially trained to work with young adolescents.

5. It provides an opportunity for extracurricular activities suited to the ages of the students.

6. It gives increased attention to guidance through the use of the *home-room* plan. In this plan, each child is assigned to a teacher who helps him with his problems and guides him in selecting subject areas for specialization.

The junior high school provides a smaller school unit than does the eight-grade elementary school and the four-year high school. It gives young adolescents a chance to work and play away from younger elementary-school children and older high-school students.

Junior high schools make special curriculums available to their students. They base these curriculums on the special interests and aptitudes of adolescents. Elective courses provide for individual differences in abilities and interests. Many schools offer remedial work for students who are weak in the basic subjects of elementary school. Some junior high schools teach foreign languages.

The junior-high school movement began in various parts of the country in 1910. Today, nearly every state has junior high schools. In some states, they are called intermediate schools or middle schools. PAUL E. ELICKER

See also ELEMENTARY SCHOOL; HIGH SCHOOL; SCHOOL.

JUNIOR LEAGUES OF AMERICA, INC., ASSOCIATION OF THE, represents Junior Leagues in the United States, Canada, and Mexico. It has a membership of more than 73,000 young women, organized into more than 190 Junior Leagues. The Junior League trains its members for volunteer service. Women between 18 and 40 work as leaders and trained volunteers in local community leagues. They may work in various economic, educational, cultural, and civic improvement programs that the local league sponsors in their community. Individual projects deal with the arts, health, recreation, children's theater, puppetry, radio, and television. The association was founded in 1921. It publishes the *Junior League Magazine*. National headquarters of the Junior League are in the Waldorf-Astoria Hotel, New York 22, N.Y. MARGARET G. TWYMAN

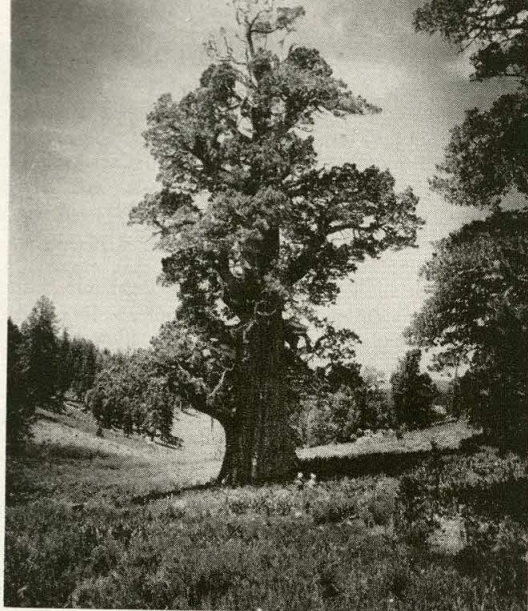
JUNIOR OPTIMIST CLUB. See OPTIMIST INTERNATIONAL.

JUNIOR RED CROSS, AMERICAN. Children in grade schools and high schools join the Red Cross through their home rooms or other school groups. The only requirement for joining is willingness to take part in the Red Cross program. The American Junior Red Cross has about 22,000,000 members. Its purposes include service to other people, health of mind and body, and world-wide friendship. It combines programs of education and service. It gives instruction in first aid, accident prevention, water safety, and home nursing. Members communicate with children in other countries through letters, school exhibits, paintings, musical recordings, and exchanges of gift boxes and chests. Junior Red Cross groups work closely with senior chapters, and follow Red Cross ideals and policies.

The American Junior Red Cross was founded in 1917. It has headquarters at 17th and D Streets N.W., Washington 13, D.C. EDWARD A. RICHARDS

See also RED CROSS.

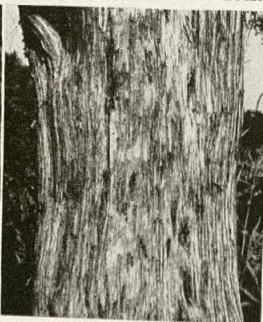
JUNIOR REPUBLIC. See GEORGE JUNIOR REPUBLIC.



John Robinson

Common Juniper Trees vary in size from small sprawling shrubs to trees 25 feet tall, above. They grow in most parts of the Northern Hemisphere. The red cedar of North America is a kind of juniper. A sprig of red cedar foliage, below left, has strong-flavored, berrylike fruits. The bark, below right, has a red-brown color and a shreddy appearance.

Brownell; Rutherford Platt



JUNIPER, *JOO nuh purr*, is the common name of a group of evergreen shrubs and small trees of the cypress family. The 60 species, or kinds, of junipers grow in many parts of the world. There are 13 species native to the United States.

Juniper trees are often called *cedars* or *red cedars*. But they are not the same as true cedars, which belong to the pine family.

Junipers have distinctive, fragrant, berrylike cones, or fruits, that vary in color from blue to red. Usually the male and female flowers grow on different trees. Only those trees that have female flowers will bear fruit. The leaves of the juniper may be needlelike and prickly, or they may be scalelike and lie tightly against the twigs.

The *common juniper* usually grows as a low, mat-forming shrub. It ranks as one of the most widely distributed woody plants in the world. It grows throughout the Northern Hemisphere in countries with a cold climate. Many cultivated forms of this juniper are planted as ornamental shrubs. The fruit contains an oil used in medicines and to flavor alcoholic drinks.

The *eastern red cedar*, or *savin*, is the only juniper of commercial importance in the United States. Its fragrant, reddish wood is used in cedar chests and closets. The odor acts as a moth repellent. Red cedar is also used in making furniture and pencils. Juniper wood resists decay, and is used for fence posts. Oils obtained from the leaves and wood of some species are used in perfumes and medicines.

Scientific Classification. Junipers belong to the cypress family, *Cupressaceae*. They make up the genus *Juniperus*. The common juniper is classified as genus *Juniperus*, species *communis*, and the eastern red cedar is classified as *J. virginiana*.

RICHARD J. PRESTON, JR.

See also CEDAR; CONE-BEARING TREES; LEAF (picture, Kinds of Leaves); TREE (color picture, Evergreen Trees).

JUNIPERO SERRA. See SERRA, JUNIPERO.

JUNIUS, *JOON yus*, **LETTERS** appeared in a London newspaper, the *Public Advertiser*, between 1769 and 1772. The 69 letters, signed *Junius*, caused a sensation because of the attacks their author made on King George III and his ministers. Historians now believe that Sir Philip Francis wrote the letters. The British government prosecuted Henry S. Woodfall, the publisher of the letters, but he was acquitted.

MARION F. LANSING

JUNK is a wooden sailing vessel used mostly by the Chinese to navigate the seas and rivers. Both the bow and stern of the junk are broad and high. Most junks have three masts, but some have only one. Others have as many as five masts. The lugsails are made of bamboo matting, often colored. The junk is common to China, but is also found elsewhere in the Far East. See also SAMPAN.

T. C. GILLMER

JUNKER, *YOONG kur*, was the name given to the landed aristocracy of Prussia. The first Junkers were descendants of knights who settled in Prussia in the Middle Ages. Under King Frederick the Great, the Junkers gained a monopoly of civilian and military offices. They wielded power and influence even after they lost their special legal rights in 1807-1808. Prussia, led by the Junkers under the statesman Otto von Bismarck, unified the German states into an empire in 1871.

After World War I, liberals of the Weimar Republic tried to reduce the powers of the Junkers. Paul von Hindenburg, a Junker who was elected president in 1925, prevented this from happening. The Junkers helped the Nazis overthrow the republic in 1933.

See also PRUSSIA.

JUNKERS. See AIR FORCE (color picture, World War II); JET PROPULSION (Jets Put to Use).

JUNO was the queen of heaven and the wife of Jupiter (Zeus) in Roman



Juno, to the Greeks and Romans, was the queen of the gods and of heaven. The Greeks called her *Hera*. This statue was found in Rome.

mythology. The ancient Greeks called her **HERA**. She had many powers and duties, and was most important as the goddess of marriage and childbirth. Women especially worshiped her. Every woman was said to have a *juno*, as every man had a *genius*. The first day of each month was sacred to her, and the month of June was named for her. Her chief festival in Rome was called the *Matronalia*. The Roman mint was located in the temple of Juno Moneta. *Moneta* is the origin of the English word, *money*.

Juno was jealous of Jupiter's love for other women, and spent much of her time trying to punish his other women and their sons. She plays a large part in Homer's *Iliad* and Virgil's *Aeneid*.

VAN JOHNSON

Related Articles in WORLD BOOK include:

Aeneid	Hercules	Semele
Argus	Jupiter	Vulcan

JUNTA, *JUN tuh*, or **JUNTO**, *JUN toh*, is an assembly or council, especially one that makes laws or administers them. The name *junta* applies chiefly to such assemblies in Spain and Spanish-American countries. An organization of the chief Whigs in England, known as the *Whig Junta*, existed during the reigns of William III and Mary II, and of Queen Anne.

The interior committee, or the *junto*, of the Privy Council under Charles I served as the beginning of the modern cabinet system. Benjamin Franklin organized a debate society called the *Junta*. It became the American Philosophical Society in 1743.

CLARENCE D. THORPE

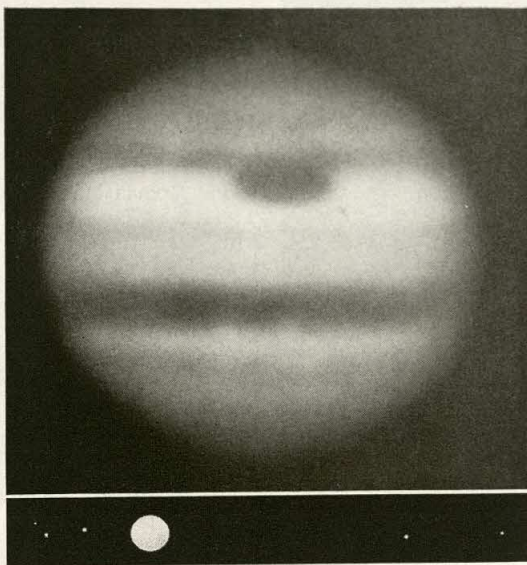
JUPITER, a missile. See GUIDED MISSILE (By Guidance System).

JUPITER is the largest of the planets. Only the sun is larger than Jupiter among the bodies in the solar system. Jupiter's diameter averages 86,000 miles, or about 11 times that of the earth. Jupiter is not a perfect sphere. From pole to pole, its diameter measures 82,900 miles, while at the equator it is 88,700 miles.

Jupiter's surface is 130 times as great as the earth's surface, and its volume 1,300 times as great. Its density, however, is less than one-fourth that of the earth. It would take more than 1,300 earths to fill the space occupied by Jupiter, but only 317 earths would equal its weight. A man weighing 150 pounds on earth would weigh about 396 pounds on Jupiter. But if Jupiter were as dense as the earth, the man would weigh about 1,643 pounds. See GRAVITATION.

Jupiter is the fifth planet in distance from the sun. Its average distance from the sun is 483,000,000 miles, or five times the distance from the earth to the sun. As the earth and Jupiter revolve around the sun, Jupiter may come within 367,320,000 miles of the earth, and at other times may be 599,960,000 miles away.

Jupiter's Appearance. Next to Venus, Jupiter is the brightest planet, and one can easily recognize it. Sometimes it appears almost as bright as Venus. When seen through an opera glass or telescope, Jupiter is distinctly flattened, because of the difference between its polar and equatorial diameters. A view through a large telescope shows an unusual planet. Jupiter has belts of different colors across it, which undergo a wide variety of changes from time to time. In 1878, observers noticed a strange red spot, 30,000 miles long and 7,000 miles wide, on Jupiter. It remained for a few years, and then faded out for a time. Traces of it were seen in 1665. The last time this spot was unusually red was in 1936.



E. C. Slipher, Lowell Observatory

Jupiter Is the Largest of the Planets. Its surface is 130 times greater than the earth's surface. The large photograph above, taken through a telescope, shows the dark red spot above the center of the planet. Jupiter's bands of colors are also visible. What we see here is not the body itself, but the swirling gases around it. The drawing below compares the size of the planet with its brightest satellites. These are four of the 12 moons that travel around Jupiter. One moon is only 14 miles in diameter.

Jupiter turns on its axis once every 9 hours and 55 minutes, so its day is less than half as long as ours. It takes almost 12 times as long as the earth does to circle the sun, so its year is almost 12 times as long as ours. Jupiter's axis tilts slightly toward the plane of its orbit, and probably its seasons do not change as much as seasons on the earth. See SEASON.

We do not see Jupiter's real surface. It is hidden by clouds of gas in violent motion. Measurements at the Lowell Observatory indicate that these clouds have a temperature of about -225° F.

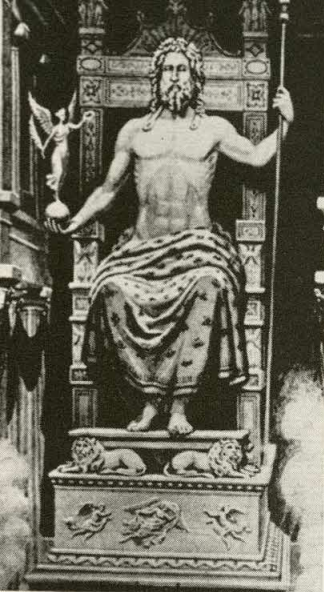
Jupiter's Satellites. Jupiter has 12 moons. Galileo discovered four of them in 1610. They were the first heavenly bodies discovered with a telescope. Astronomers have since learned that these four satellites always keep the same side toward Jupiter, as does the earth's moon. They spin once in the same time that it takes them to travel around Jupiter. Roemer made his great measurement of the velocity of light in 1675 by observing the eclipses of the satellites of Jupiter.

E. E. Barnard of the Lick Observatory discovered the fifth satellite in 1892, and C. D. Perrin of the same institution discovered the sixth and seventh in 1904 and 1905. The eighth satellite was discovered in 1908 and the ninth in 1914.

In 1938, Seth Nicholson of Mount Wilson and Palomar Observatories discovered Jupiter's tenth and eleventh satellites. In 1951, he identified the twelfth, a moon which is only 14 miles in diameter. Like three of the other moons of Jupiter, it revolves around the planet from east to west. The remaining eight moons travel from west to east.

E. C. SLIPHER

See also BARNARD, EDWARD E.; GALILEO (His Discoveries in Astronomy); PLANET; SATELLITE.



Brown Bros.

Jupiter reigned over all other gods in Roman mythology. He overthrew his father, Saturn, and divided the world with his brothers, Pluto and Neptune.

JUPITER was king of the gods in Roman mythology. The ancient Greeks called him *Zeus*. Jupiter overthrew his father, Saturn, and then divided the world with his two brothers. He gave control of the Lower World to Pluto, and control of the sea to Neptune. Jupiter kept the heavens and ruled the gods and men. He and his family were called *Olympians* because they were believed to live on Mt. Olympus in Greece. In Rome, Jupiter's temple stood on the Capitoline

hill. Roman triumphal processions always ended there.

Jupiter's first wife was Metis, or Wisdom. A prophecy said that Jupiter's first child would be wiser than its father. This alarmed him, so he swallowed Metis. Soon he had a headache, and the goddess Minerva sprang from his forehead. She was fully grown and dressed in armor. Jupiter's second wife was Themis, or Justice. His third wife was Juno (Hera). Jupiter loved many other goddesses and mortal women. He was the father of many gods, goddesses, and heroes, including Apollo, Diana, Mercury, Mars, Perseus, Hebe, Dionysus, and Hercules.

Jupiter was the god of thunder, lightning, and rain. Sometimes, he was called the god of destiny, justice, virtue, and law. In art, he is represented as a handsome, bearded man. Sometimes he holds a thunderbolt. His bird, the eagle, is often shown with him.

VAN JOHNSON

See also **ATLAS**; **EUROPA**; **IO**; **JUNO**; **MINERVA**.

JURA, *JOO ruh*, is the name of a mountain range that lies between the Rhine and Rhône rivers. It forms part of the boundary between Switzerland and France. The Jura Mountains extend from the northeast to the southwest in parallel ridges. The highest peaks of the Juras are less than 6,000 feet above sea level. For location, see **SWITZERLAND** (color map).

Valuable forests formerly covered the mountainsides. However, much of the forest land has been cleared for pasture. As a result, the dairy industry has become an important source of income. Vineyards cover many of the lower slopes. Many of the villages and towns in the valleys produce beautiful Swiss watches. La Chaux-de-Fonds, in Switzerland, is a center of the watchmaking industry. Basel, which stands at the northeastern end of the range, is an important Swiss railway junction and industrial city.

FRANKLIN C. ERICKSON

JURASSIC PERIOD. See **GEOLOGY** (table, Outline of Earth History).

JURISPRUDENCE. See **LAW**.

JURIST. See **JUDGE**; also the list of Lawyers and Jurists in the **BIOGRAPHY** section of the **READING AND STUDY GUIDE**.

JURY AND TRIAL BY JURY. A jury is a selected group of laymen that hears the witnesses in legal disputes and decides the facts. Members of a jury are sworn to do justice. The word *jury* comes from the medieval Latin word *jurata*, meaning *sworn*. A courtroom trial in which a jury decides the facts is called a *trial by jury*. The *trial jury* is called a *petit*, or *petty*, jury, and is the most common form of jury. There are, however, two other types. The *grand jury* has the duty to hear evidence and bring formal charges against persons believed guilty of a crime. Persons *indicted*, or accused, by the grand jury are later tried by the petit jury in a criminal trial. The *coroner's jury* has the duty of conducting an *inquest*, or an investigation, in case of an unexplained death, to try to determine the cause of death.

Grand Jury has from 1 to 23 members. It decides whether there is enough evidence to hold for trial a man suspected of crime. In some cases, it makes a formal accusation called an *indictment* against the man. He is then indicted and must face a future criminal trial by the petit jury. The district attorney or other prosecutor usually schedules the hearings of witnesses before the grand jury. Unlike petit jurors, grand jurors may rely on their own knowledge as well as on that of the witnesses who testify.

Great Britain, with few exceptions, abandoned the grand jury in 1933. In place of an indictment, it substituted an accusation by an official. But grand juries are still widely used in the United States. Occasionally, a grand jury may feel that the public prosecutor is inadequately performing his duties. It may proceed to prefer charges against suspected persons without regard to his recommendations. Then, it may be called a *runaway* grand jury. It may thus become the ordinary citizen's means of investigating and speeding the administration of criminal justice.

The United States Constitution requires an indictment by a grand jury before trial for most crimes against federal law. In cases where an indictment is not necessary, an *information* by the prosecuting attorney takes its place.

Coroner's Jury inquires, or makes an *inquest*, into the causes of death in cases where there is doubt. It usually consists of six members. In some states, the coroner's jury system has been abandoned and its functions are performed by a professional medical examiner.

Petit, or Petty, Jury is so named because it usually has fewer members than the grand jury. The word *petit* is French, and means *small*. The petit jury traditionally had 12 members. The United States Constitution requires 12 members in the federal courts, but some state petit juries may have as few as 6 members.

The right of an accused person to a trial by jury differs between civil and criminal cases. Article III of the United States Constitution provides that all criminal trials in federal courts shall be by jury (see **UNITED STATES CONSTITUTION** [Article III, Section 2]). Amendment 6 to the Constitution further describes this right. It requires that the jury be impartial, and be selected from the community where the crime was committed. The accused can ask for trial by judge without jury if he prefers.

Amendment 7 directs that the federal courts hold a jury trial in any "suits at common law" where money damages of more than \$20 are asked. Many civil cases,

Jurors Listen attentively as an attorney questions a witness. Members of the jury try to reach a fair decision by weighing all the evidence presented.



Ewing Galloway

however, are not "suits at common law." These include *admiralty* cases, concerning ships, and *equity* cases, concerning such things as trust funds and injunctions. The United States Constitution does not require a trial by jury in the state courts, but the laws in most states provide for jury trials.

Selection of Jurors. Before each term of court, a jury commissioner or other public officer prepares a *panel*, or large initial list, of qualified jurors. For each trial, jurors are selected by lot from this panel. The lawyers for either side may reject any prospective juror *for cause* by stating some reason why he should not serve as a juror. For example, he may be related to one of the parties involved in the case. Each side may also reject a limited number of prospective jurors, without stating any reason. This is called a *peremptory* challenge. Excused persons are replaced in the *jury box*, or seats where the jurors will sit, by new prospective jurors from the panel. These, in turn, may be rejected or accepted by the lawyers trying the case. The selection of a jury sometimes takes several days. Jurors receive a small payment for each day's service.

The Trial. Before the trial begins, the jurors swear to decide the facts fairly. They hear the testimony given by witnesses for both sides, including cross-examination. Then counsel for each side "sum up," or summarize the case, and the judge explains the applicable law in his *instruction*, or *charge to the jury*.

In civil suits for money damages, the jury must decide who is at fault and must determine the amount of the money verdict. In criminal cases, the jury must decide whether or not the accused is guilty "beyond a reasonable doubt," and then either return a verdict of guilty, or *acquit* the defendant by a verdict of not guilty. If the verdict is guilty, the judge imposes the *sentence*, or punishment, within limits that have been fixed by the legislature.

Traditionally, the jury's verdict must be unanimous. A *hung jury* is one that cannot agree. It usually makes necessary a new trial, with new jurors. A few states in criminal cases, and more in civil suits, have abandoned the requirement of unanimity. They make a stated majority sufficient for a verdict.

When the facts are so clearly in favor of one party that the jury could not reasonably decide any other way, the judge may direct the jury to return a *directed verdict*. But he cannot direct a verdict of guilty in a criminal case, even though he may direct a verdict of not guilty. The judge can order a new trial if he finds that there have been irregularities.

History. The history of the jury goes back at least to Norman customs in the A.D. 800's. The first juries were used to get information about matters of common knowledge in the locality, which the judges might not know, such as the commission of crimes or the boundaries of the king's land. Trial by jury gradually took the place of uncivilized proceedings such as trial by combat or trial by ordeal.

Jury procedure has changed as time has passed. Jurors were once much like witnesses. They were called because they had knowledge of the facts. Today, a prospective juror with special knowledge about the case is rejected.

A juror must decide only on the evidence produced by witnesses in court. Various forms of the jury system spread to many countries of Europe in the 1800's, and later came to South America. In Great Britain and other countries of Europe, and in South America, juries are seldom used in trials of civil cases. They are more frequent in criminal trials.

Some critics consider the jury an expensive, unreliable, and slow way to secure justice. Jurors are sometimes thought more subject to emotion, more easily swayed by eloquent lawyers, and more likely to be swayed by newspaper stories than professional judges would be. But the jury remains an important part of the legal system, and probably few persons would be willing to abolish it.

ARTHUR E. SUTHERLAND

Related Articles in WORLD BOOK include:

Bailiff	Court	Lawyer
Bill of Rights	Crime	Palladium
Civil Law	Indictment	Trial by Combat
Common Law	Judge	Venire
Coroner		

JUSTICE. See JUDGE; JUSTICE OF THE PEACE; LAW; SUPREME COURT OF THE UNITED STATES.

JUSTICE, DEPARTMENT OF

JUSTICE, DEPARTMENT OF, is an executive department of the United States government. The Attorney General, a member of the President's Cabinet, heads the department. It enforces federal laws and provides legal advice for the President and the heads of the executive departments of the government.

Functions. The Department of Justice conducts all suits in the Supreme Court that concern the United States. It supervises federal penal institutions. It investigates and detects violations of federal laws. The Attorney General supervises the activities of the United States district attorneys and marshals. They prosecute violators of the laws.

The Attorney General is appointed by the President with the approval of the Senate. He acts as the chief legal officer of the federal government. Other members of his staff include the Deputy Attorney General, Solicitor General, Pardon Attorney, and the assistant attorneys general who direct the offices of alien property and legal counsel.

Organization. Eight other assistant attorneys general handle department activities, including (1) antitrust law enforcement, (2) civil suits and claims involving the federal government, (3) federal criminal cases, (4) internal security, (5) suits relating to national lands and property, (6) lawsuits related to internal revenue laws,

(7) administration, and (8) suits on civil rights.

Other department agencies include the Board of Immigration Appeals, Board of Parole, Bureau of Prisons, Federal Bureau of Investigation, and Immigration and Naturalization Service.

History. Congress set up the office of the Attorney General in 1789. The Attorney General served in the Cabinet, but did not head an executive department. He advised the President, and represented the federal government in cases before the Supreme Court. Almost every federal department had some part in enforcing national laws. In 1870, Congress set up a new Department of Justice under the Attorney General, because of the many legal problems that arose in the period after the Civil War. It took over law-enforcement duties from the other departments. The department employs more than 30,000 persons, including about 1,600 lawyers. It has been called "the largest law office in the world."

JOHN C. BOLLEN

Related Articles in WORLD BOOK include:

Attorney General	District Court	Lawyer
Cabinet	Federal Bureau of	Marshal
Court	Investigation	Parole
Court of Appeals	Immigration and	Prison
Court of Claims	Naturalization	Prisons, Bureau of
Court of	Service	Supreme Court of
Military Appeals	Judge	the United States
Crime	Law	Tax Court of the
District Attorney	Law Enforcement	United States

ATTORNEYS GENERAL OF THE UNITED STATES

Name	Year Appointed	Under President	Name	Year Appointed	Under President
*Edmund Randolph	1789	Washington	Ebenezer R. Hoar	1869	Grant
William Bradford	1794	Washington	Amos T. Ackerman	1870	Grant
Charles Lee	1795	Washington	George H. Williams	1871	Grant
Theophilus Parsons	1797	J. Adams	Edwards Pierrepont	1875	Grant
Levi Lincoln	1801	J. Adams	Alphonso Taft	1876	Grant
Robert Smith	1801	Jefferson	Charles Devens	1877	Hayes
John Breckinridge	1805	Jefferson	Isaac W. MacVeagh	1881	Garfield
Caesar Rodney	1805	Jefferson	Benjamin H. Brewster	1881	Arthur
William Pinkney	1807	Jefferson	Augustus H. Garland	1885	Cleveland
Richard Rush	1809	Madison	William H. H. Miller	1889	B. Harrison
William Wirt	1811	Madison	*Richard Olney	1893	Cleveland
John M. Berrien	1814	Madison	Judson Harmon	1895	Cleveland
*Roger B. Taney	1817	Monroe	Joseph McKenna	1897	McKinley
Benjamin F. Butler	1817	Monroe	John W. Griggs	1898	McKinley
Felix Grundy	1825	J. Q. Adams	*Philander C. Knox	1901	McKinley
Henry D. Gilpin	1829	Jackson	William H. Moody	1901	T. Roosevelt
John J. Crittenden	1831	Jackson	*Charles J. Bonaparte	1904	T. Roosevelt
Hugh S. Legare	1833	Jackson	*George W. Wickersham	1907	T. Roosevelt
John Nelson	1837	Van Buren	J. C. McReynolds	1909	Taft
John Y. Mason	1838	Van Buren	Thomas W. Gregory	1913	Wilson
Nathan Clifford	1840	Van Buren	A. Mitchell Palmer	1914	Wilson
Isaac Toucey	1841	W. H. Harrison	Harry M. Daugherty	1919	Wilson
Reverdy Johnson	1841	Tyler	*Harlan F. Stone	1921	Harding
John J. Crittenden	1841	Tyler	John G. Sargent	1923	Coolidge
Caleb Cushing	1843	Tyler	*William D. Mitchell	1924	Coolidge
Jeremiah S. Black	1845	Polk	Homer S. Cummings	1925	Coolidge
*Edwin M. Stanton	1846	Polk	Frank Murphy	1929	Hoover
Edward Bates	1848	Polk	*Robert H. Jackson	1933	F. D. Roosevelt
Titian J. Coffey	1849	Taylor	Francis Biddle	1939	F. D. Roosevelt
James Speed	1850	Fillmore		1940	F. D. Roosevelt
Henry Stanbery	1853	Pierce		1941	F. D. Roosevelt
William Evarts	1857	Buchanan		1945	Truman
	1860	Buchanan	*Tom C. Clark	1945	Truman
	1861	Lincoln	J. Howard McGrath	1949	Truman
	1863	Lincoln	James P. McGranery	1952	Truman
	1864	Lincoln	*Herbert Brownell, Jr.	1953	Eisenhower
	1865	Johnson	William P. Rogers	1957	Eisenhower
	1866	Johnson	Robert F. Kennedy	1961	Kennedy
	1868	Johnson			

*Has a separate biography in WORLD BOOK.

DEPARTMENT OF JUSTICE

THE PRESIDENT

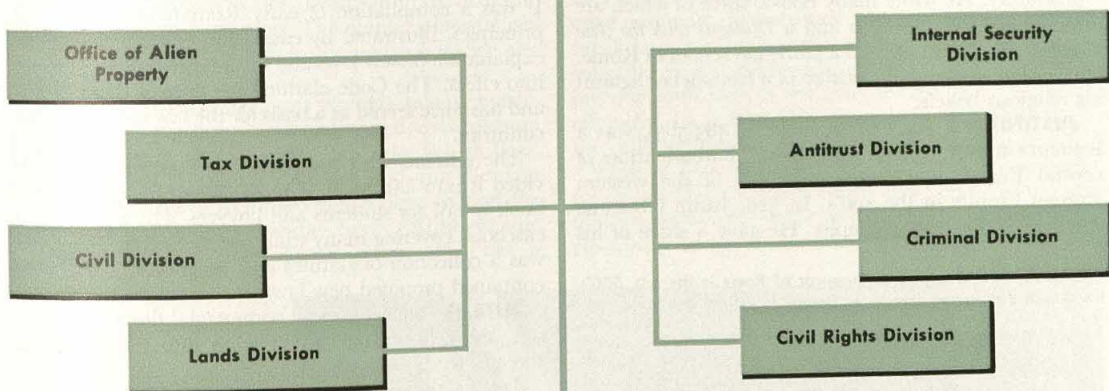


Department of Justice Building, U.S. Dept. of Justice

THE ATTORNEY GENERAL

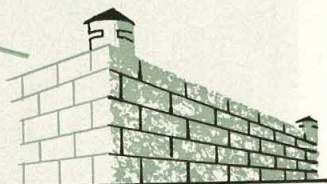


DEPUTY ATTORNEY GENERAL

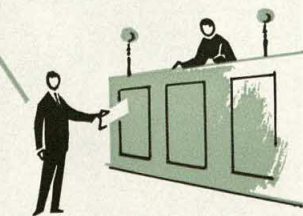


Federal Bureau of Investigation

Immigration and Naturalization Service



Bureau of Prisons



United States Attorneys and Marshals

JUSTICE OF THE PEACE

JUSTICE OF THE PEACE is an officer of a township, county, or other small unit of government. He has certain judicial powers. He usually hears civil cases that involve small sums of money. More serious cases are first heard in the state trial courts.

The powers of a justice of the peace vary in different states. He may have the power to punish persons for breaking criminal laws, such as traffic laws. He does not usually have power to hear cases involving serious crime. Sometimes, he decides whether an accused person should be held for a grand jury, which then will decide whether the accused person should stand trial. The justice of the peace also may be empowered to perform marriage services.

Justices of the peace are appointed by the governor in some states. In other states, the people elect them. In large cities, police magistrates perform the same functions as justices of the peace.

ERWIN N. GRISWOLD

JUSTICIALISM. See PERÓN, JUAN DOMINGO.

JUSTIN II. See BYZANTINE EMPIRE (Invasions).

JUSTIN THE MARTYR, SAINT (A.D. 100?-165?), became the first Christian writer to construct a bridge between faith and reason. He became a convert in Ephesus, an Asian city, and gave his life to the defense of Christianity. He wrote many books, three of which are in existence: two *Apologies* and a *Dialogue with the Jew Tryphon*. St. Justin opened a Christian school in Rome. He was later beheaded, because of a Roman law against his religious beliefs.

JUSTINIAN I, *jus TIN ih un* (A.D. 483-565), was a Roman emperor, called "The Great." Barbaric tribes of central Europe had conquered most of the western Roman Empire in the 400's. In 518, Justin I became emperor of the eastern empire. He gave a share of his

Justinian the Great was Emperor of Rome in the A.D. 500's. He directed the organization of Roman laws into one code.

BROWN BROS.



power to his nephew in 527. When he died a few months later, his nephew became Emperor Justinian I.

Justinian spent more than 20 years in driving the Vandals, Huns, and Franks from Italy and North Africa. He restored most of the empire to Roman control. But his work of most lasting importance was to gather together Roman law into one code. The result was the *Corpus Juris Civilis*, or *Body of Civil Law*. This legal code became the foundation for law in most western European countries. See **JUSTINIAN CODE**.

Justinian was a Christian, and tried to unify the Roman Empire in a single Christian faith. He made war on heretics, particularly the Arians (see **ARIANISM**). He also closed the Athenian schools of philosophy in 529 because he believed that they taught paganism. Justinian erected many fortresses, harbors, and monasteries. He built the Church of Saint Sophia at Constantinople (see **SAINT SOPHIA**).

ROBERT GEHLMANN BONE

See also **THEODORA**.

JUSTINIAN CODE. Justinian I, ruler of the eastern Roman Empire from 527 to 565, commanded 10 of the wisest men in his realm to draw up a collection of the Roman laws. This collection is known as the *Corpus Juris Civilis*, which means *Body of Civil Law*. Also called the *Justinian Code*, this body of law is recognized as one of the greatest Roman contributions to civilization. It was a compilation of early Roman laws and legal principles, illustrated by cases, and combined with an explanation of new laws and future legislation to be put into effect. The Code clarified the laws of those times, and has since served as a basis for the law codes of many countries.

The scholars who compiled the Justinian Code divided it into four parts. The *Institutes* served as a textbook in law for students and lawyers. The *Digest* was a casebook covering many trials and decisions. The *Codex* was a collection of statutes and principles. The *Novels* contained proposed new laws.

ERWIN N. GRISWOLD

JUTE, the cheapest of all commercial fibers, is a long, soft, shiny fiber that can be spun into coarse, strong threads.

Jute is the product of two closely related tropical plants which scientists call *Corchorus capsularis* and *Corchorus olitorius*. These plants belong to the basswood, or *Tiliaceae*, family. The majority of these plants grow in India and Pakistan, but China and Formosa also produce some jute.

To grow jute, farmers simply scatter, or *broadcast*, the seeds on well-tilled soil. They do not even cover the seeds. When the plants are about 6 inches tall, the workers loosen the earth around them with a rake. Then they thin the plants out. Weeds are removed from around the plants only twice before harvesting time. Jute stalks grow 7 to 14 feet high, and do not branch except at the top. Usually they are harvested after they bloom, but before the blossoms go to seed. The best fiber is obtained when the plants are harvested immediately after they bloom.

The workers harvest the jute by cutting off the stalks close to the ground. Then they strip the stalks of leaves and blossoms and tie them in bundles. These bundles are soaked in water until the outer bark begins to rot. Jute makers call this process *retting*. Retting takes from 5 to 10 days. It loosens the jute fibers by dissolving the sticky gums which hold the fibers together. After the

fibers are loosened, the workers wade into the pools of water and beat the mass of fiber with clubs. This separates the fibers, which are then stripped from the stalks and rinsed by being swished in the water. Finally they are hung up to dry. Jute is graded in quality according to its color, its strength, and the length of the fibers. Then it is pressed into bales which weigh about 400 pounds each, and shipped to manufacturers.

Jute is most often used to wrap bales of raw cotton and to make gunny sacks and gunny cloth. The fibers are also woven into coarse curtains, chair coverings, carpets, and burlap. Very fine threads of jute are sometimes made into imitation silk. The fibers are used alone or blended with other fibers to make twine, cordage, and rope. Jute butts, which are the coarse ends of the plants, are sometimes used to make cheap grades of cloth. Bombay hemp, a fiber that is like jute, is used for similar purposes.

MORRIS S. ROSENTHAL

See also BURLAP; GUNNY.

JUTE is a member of an early Teutonic tribe from Denmark or northern Germany. The Jutes, with the Angles and Saxons, conquered the island of Britain during the A.D. 400's and 500's. According to the *Anglo-Saxon Chronicle*, Hengist and Horsa led the first Jutes who landed on the island in A.D. 449. The Angles, Saxons, and Jutes conquered all of south Britain except the part now called Wales. Many Britons fled into Wales to escape the invaders. The name *Jutland* (northern Denmark) may come from the name *Jute*. See also ANGLO-SAXON.

WILLIAM C. BARK

JUTLAND, BATTLE OF, was the only major engagement between the fleets of Germany and Great Britain in World War I. On May 31, 1916, the British fleet, under Admiral Sir John Jellicoe, and the German fleet, under Admiral Reinhard von Scheer, met off the coast of Denmark in a two-day battle. Although the Germans destroyed more British ships, they lost a

greater percentage of their smaller navy. Both sides claimed victory, but the battle left Britain in control of the seas. See also JELlicoe, SIR JOHN; WORLD WAR I (The Battle of Jutland).

JUVENAL, *JOO vee nul* (A.D. 60?-140?), was one of Rome's greatest writers of verse satire. Little is known of his life, but it appears that he had a promising official career that was suddenly blocked. The first 9 of his 16 satires bitterly attack the morals, manners, and taste of his time. The others are more like verse letters.

Juvenal never intended to speak of the good features of Roman life. His grim picture, though just, is therefore one-sided. Samuel Johnson imitated his two best pieces, Nos. 3 and 10, in *London* and *The Vanity of Human Wishes* (see JOHNSON, SAMUEL). Juvenal was born at Aquinum.

MOSES HADAS

JUVENILE COURT, *JOO vee nil*, is a special court established to handle cases that involve children. Not many years ago, a child could be sent to prison for stealing a loaf of bread. Children had no legal rights to manage their own property, but when they broke the law, the courts considered them fully responsible adults. Judges in regular courts tried them for lawbreaking and sentenced them to terms in regular prisons. In prison, they associated with murderers, thieves, and other hardened criminals. The attitude now toward children who break laws is entirely different. Every effort is made to solve the child's problems before he comes to court. The juvenile court itself is not considered a place to punish offenders. Its purpose is to give help and guidance to the child by placing him under its guardianship.

Most of the cities of the United States have special courts for children. These courts vary greatly in the way they are set up, and in the procedures they follow. Some cities have set up juvenile courts as departments of the

H. Armstrong Roberts

The Juvenile Court Judge often consults with a young offender and his parents in an attempt to solve the youth's problem. Juvenile courts offer help and guidance to try to correct offenders, rather than to punish them as criminals.



JUVENILE DELINQUENCY

court of domestic relations, the circuit court, or other branches of the regular court system. Other cities make the juvenile court a separate division.

Procedure. Juvenile courts also differ greatly in their effectiveness. The choice of a person well suited for the judgeship is important in determining the effectiveness of a juvenile court. Men and women who understand children, and who are both wise and kind, make the best judges. Women judges preside over special girls' courts in many cities. The most successful juvenile courts have large staffs of trained workers. These workers investigate each case, and consult psychiatrists and other specialists about the child in question. They also keep track of the child after he has been placed on probation. An effective probation system must include enough good probation workers to permit careful checking and observation of each case.

Hearings in a juvenile court differ considerably from the proceedings in a regular court. No spectators are allowed in the sessions. The judge talks informally to the child, his parents, and the court workers. Officers study each case as a separate problem. When the child's home is the source of his trouble, he may be placed in a foster home where the court workers watch over his progress. The child is sent to a training school only when all other measures have failed. These schools resemble educational institutions rather than prisons.

History. The social reform movement of the late 1800's included efforts to get better treatment for child offenders. Massachusetts was the first state to provide separate court sessions for children's cases. The first children's courts were founded in Adelaide, South Australia, and in Toronto, Canada. In the United States, Colorado and Illinois enacted laws providing for juvenile courts in 1899. Chicago set up its court in that year, and Denver established one in 1900. The Denver court attracted attention because of its outstanding judge, Benjamin B. Lindsey. Most American cities set up juvenile courts during the early 1900's, and so did many cities in Europe.

JOHN W. WADE

See also JUVENILE DELINQUENCY; LINDSEY, BENJAMIN BARR.

JUVENILE DELINQUENCY. A child who breaks a law is a juvenile delinquent, not a criminal. In the United States, he is tried in special courts where every effort is made to help keep him from breaking more laws, rather than to punish him for his crime.

Almost any kind of action or behavior on the part of a child which endangers his own well-being may be considered juvenile delinquency. In New York, the law says that a child who begs for money in public, associates with immoral persons, or visits illegal places is a delinquent. The definition varies in different states. In some states juvenile courts have jurisdiction over children only until they reach the age of 16. But, in most states, the age limit is 18.

Juvenile delinquency is an important problem for law-enforcement officers and for society in general. Juvenile delinquency is increasing faster than the population is growing in size. It is increasing faster among girls than among boys. Young people find themselves living in a world in which standards are changing quickly. They no longer find guidance in the same way their

grandparents did. Social agencies and people interested in helping young people face an ever-growing problem.

Causes of Juvenile Delinquency. The general causes of juvenile delinquency are found in the social conditions of the time. Certain trends in everyday life have made youth feel insecure, and unsure of what is good conduct and what is bad. One of these underlying causes is the emphasis which modern civilization has placed on money values. Children often get the idea that behavior is to be judged only by its success in getting the individual what he wants. In the last twenty-five years, the home and family life have become much less important to young and old alike. Often, parents are divorced and remarried. The automobile provides new freedom of movement. Motion pictures, radio, television, and comic strips often stress the romantic thrills of excitement and crime. Many children no longer learn moral values either at home or at church. Children reflect the loss of standards and insecurity that they feel in their parents and in other adults.

In each case of juvenile delinquency, however, there are definite causes. It is not easy to say just why certain children become problems and others grow up as so-called sane and normal individuals. Every case can be traced to a lack of adjustment between the child and society. Sometimes there is a basic weakness in the child himself. As a rule, this weakness shows up because of trouble in the child's surroundings. These surroundings include the home, the family, and the neighborhood.

Treatment. The juvenile court was the first step in the important direction of handling youthful lawbreakers as children who needed care and protection, rather than as criminals who should be punished. Many new methods of protection and correction have been developed in connection with the juvenile court and with social agencies which care for children. The probation system has made it possible to watch over the child without taking him away from his home. Mental clinics have provided a better understanding of children's problems. Government studies have thrown light on the whole question of juvenile delinquency. Even the modern reform school, to which the child is sent only after other methods have failed, is a far less harmful place than prison. Each child who comes before the juvenile court is handled as an individual problem, and each case is studied in the same way that a physician studies a patient. The consulting psychiatrist analyzes the child's mental life. The probation officer studies the history and surroundings of the child. The social workers of the juvenile courts and of other social agencies try to give the child a more normal life.

At present, many agencies and organizations are trying to prevent juvenile delinquency before it occurs. Special stress is being placed on providing playgrounds and programs of recreation for youth. Youth organizations such as the Boy Scouts and Girl Scouts have camps where children can spend their vacations. YMCA and YWCA groups provide athletic opportunities, recreational programs, and club and handicraft activities. Those who are concerned with juvenile delinquency have come to realize that it can be prevented only when every child is given a full opportunity to lead a happy, contented, healthy, and useful life.

EMORY S. BOGARDUS

See also CHARACTER EDUCATION; CHILD; FAMILY; JUVENILE COURT; REFORMATORY.

Kk is the 11th letter of our alphabet. It was also a letter in the alphabet used by the Semites, who once lived in Syria and Palestine. They named the letter *kaph*, their word for *palm of the hand*. They probably adapted an Egyptian *hieroglyphic*, or picture symbol, of an open hand to represent the letter. The ancient Greeks took the letter into their alphabet and called it *kappa*. They gave it the form that it has had ever since that time. See ALPHABET.

Uses. *K* or *k* is about the 22nd most frequently used letter in books, newspapers, and other printed material in English. *K* is used as an abbreviation for *knight* or *knights*, as in *KC* for *Knights of Columbus* and *K.G.* for *Knights of the Order of the Garter*. Assistants in military kitchens serve on *K.P.*, or *kitchen police duty*. In chess, *K* stands for *king*, and in chemistry it represents the element *potassium*.

In weights and measures, *k* represents *kilo*, a prefix meaning 1,000. In electricity, it stands for *capacity*. In some countries, *k* represents a unit of money—*krona* in Germany, Denmark, and Norway; *krona* in Sweden; and *kopec* in Russia.

Pronunciation. In English, a person pronounces *k* in such words as *king* with his tongue back and with its sides touching the velum, or soft palate. The velum is closed, and the vocal cords do not vibrate. The *k* is silent when it appears before *n* at the beginning of a word, as in such words as *knee*, *knock*, and *know*. See PRONUNCIATION.

I. J. GELB and J. M. WELLS



The 11th letter took its shape from an ancient Egyptian symbol used to show an open hand. Its sound came from the Semitic word *kaph*, which means *palm of the hand*.



The Romans, about A.D. 114, took the letter from the Greeks.



The Greeks, about 600 B.C., gave the letter the form that is used today. They called it *kappa*.



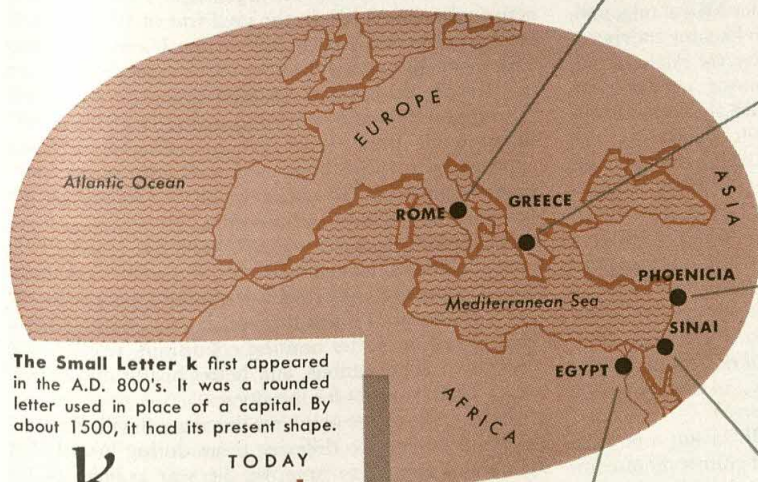
The Phoenicians, about 1000 B.C., wrote it with three prongs.



The Semites changed the Egyptian symbol, about 1500 B.C., until it was only two crossed lines.



The Egyptians, about 3000 B.C., wrote with a symbol that represented a slightly cupped hand.



The Small Letter k first appeared in the A.D. 800's. It was a rounded letter used in place of a capital. By about 1500, it had its present shape.

K

A.D. 800

TODAY

k k

K2. See MOUNT GODWIN-AUSTEN.

K9 CORPS. See DOG (How Dogs Help Man).

KAABA, or **CAABA**, *KAH buh*, or *KAH uh buh*, is the most sacred shrine of Islam. Moslems the world over turn their faces toward the Kaaba when they pray. It is a small building in the shape of a cube, with a flat roof. It stands in the center of the Great Mosque at Mecca, and is the chief object of Moslem pilgrimages.

In the northeast corner of the Kaaba rests the famous Black Stone, supposedly given by Gabriel to Abraham. This stone, probably a meteorite, is nearly oval in shape, and about 7 inches in diameter. When Mohammed returned to Mecca, he destroyed all idols in the Kaaba, but spared the Black Stone. Since then all Moslems have regarded it with the deepest reverence. NABIA ABBOTT

See also **MECCA** (picture).

KABUKI. See **JAPANESE LITERATURE** (Drama); **DANCING** (The Far East).

KABUL, *KAH bool* (pop. 206,208), is the capital and largest city of Afghanistan. The city lies 5,890 feet above sea level on the Kabul River in northeastern Afghanistan. For location, see **AFGHANISTAN** (color map). The part of Kabul on the south bank of the Kabul River is very old. It has many mosques and a large bazaar. Flat-roofed adobe houses line the narrow, twisting streets. The new section, north of the river, has wide boulevards and modern buildings.

Kabul produces many handicrafts. It also has small textile mills and food-canning factories. The city has been an important trading center for centuries. Camel, donkey, pony, and truck caravans pass through Kabul while traveling to and from Iran, Russia, and Pakistan. The historic Khyber Pass cuts through the Hindu Kush mountain range between Afghanistan and Pakistan near Kabul. The University of Kabul is in the city.

Kabul was the capital of the Mogul Empire of India in the early 1500's. It remained under Mogul rule, and, later, Persian rule, until Afghanistan became independent in the 1700's. The *emir*, or ruler, of Afghanistan, Timur Shah, switched the country's capital from Kandahar to Kabul in 1773. He did this because the people of Kandahar had tried to revolt against him. The British occupied Kabul during the British-Afghan wars of the 1800's.

PAUL L. HANNA

KABYLE. See **BERBER**.

KAFFIR, *KAF ur*, comes from an Arabic word that means *infidel*, or *unbeliever*. Moslems originally applied the term to all non-Islamic Africans (see **ISLAM**). Later, Europeans adopted *kaffir* as a name for the Bantu peoples and their language (see **BANTU**).

KAFIR is any one of a group of grain sorghums imported originally from Africa (see **SORGHUM**). They are named for the Kaffir tribes of southern Africa. Kafir thrive in the plains region of North America where rainfall is not abundant. These comlike plants grow 4 to 7

feet tall. Their stalks are juicy but not sweet. At the tip of the stalk is a compact, cylinder-shaped seed head. The small, beardless grains may be white, pink, or red. Sometimes they are partly covered by black hulls.

Kafir plants can be used for silage, or bundled and fed dry to cattle. The grain has about the same food value as corn, but is hard and difficult to digest unless cracked or ground.

Scientific Classification. The kafirs belong to the grass family, *Gramineae*. They are varieties of the genus *Sorghum*, species *vulgare*.

RICHARD W. POHL

KAFKA, *KAHF kuh*, **FRANZ** (1883-1924), was an Austrian novelist whose fame reached its height after



Alfred Knopf

Franz Kafka

World War II. Only a few of his short stories were published during his lifetime. His friend, Max Brod, disregarded Kafka's wish that his unpublished manuscripts be burned after his death, and edited them. The three novels which resulted, *The Trial* (1925), *The Castle* (1926), and *Amerika* (1927), deal with a world in which dream and reality are closely interwoven. Man appears as a hunted creature,

facing shapeless, inhuman forces that prevent him from achieving his aims and fill him with anxiety.

Kafka was born in Prague. He received a doctor's degree in law from the University of Prague and became an insurance official. But he hated the monotony of the job. Kafka suffered from tuberculosis, and died in an Austrian sanatorium.

G. F. MERKEL

KAGANOVICH, *KAG ah NO vitch*, **LAZAR MOISEYEVICH** (1893-), a Russian political leader, became active as a communist in the civil war of 1917 to 1921. He moved from his birthplace in the Ukraine to Moscow, where he entered the Communist party's Politburo in 1926. He held many high government posts, mainly in transportation and heavy industries. In 1944, Joseph Stalin made him deputy premier. Kaganovich was expelled from all his high party and government positions in June, 1957, for opposing the Communist party's first secretary, Nikita Khrushchev.

ALBERT PARRY

KAGAWA, *kah gah wah*, **TOYOHIKO** (1888-1960), was a leading Christian minister and social worker in Japan. He did most of his work among people in the industrial areas of his birthplace, Kobe, and of Tokyo. He worked for better housing conditions, workers' co-operatives, labor unions, and better health and educational opportunities for the poor.

Long an advocate of international good will, Kagawa was imprisoned two different times during World War II for his refusal to approve the war policies of his country.

L. J. TRINTERUD

KAHANAMOKU, DUKE. See **SWIMMING** (Famous Swimmers).

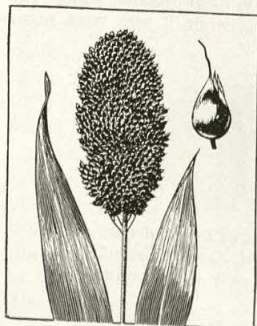
KAHN TEST. See **BLOOD** (Medical Uses of Blood).

KAHOOLAWÉ. See **HAWAII** (The Islands).

KAI-SHEK, CHIANG. See **CHIANG KAI-SHEK**.

KAINITE, *KAY uh nite*, or **KAINIT**, is a mineral containing potassium used as a fertilizer.

Seed Head of Kafir, and a single seed (enlarged).

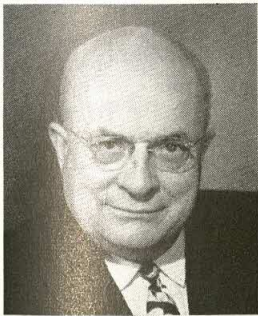


KAISER, *KYE* zur, was the title used by rulers of the German Empire. *Kaiser* is the German form of the Latin word *Caesar*, the title held by Roman emperors who followed Gaius Julius Caesar. German emperors of the Holy Roman Empire sometimes used the title *Caesar*, which became *Kaiser* in German. Wilhelm I of Prussia took the title of *Kaiser* in 1871, when he became emperor of a united Germany. The last German *Kaiser* was Wilhelm II, who came to the throne in 1888. See also **CAESAR**; **CZAR**.

MARION F. LANSING

KAISER, *KYE* zur, **HENRY JOHN** (1882-), attracted national attention during World War II by the speed with which he built ships. He ignored the usual methods of building from the keel up, and used assembly-line methods. His ships were built in separate sections and welded together in a few days.

Kaiser was born in Sprout Brook, N.Y. He left school at 13 to go to work. Later, he went to the Pacific Coast, where he became a road builder. From 1931 to 1945, Kaiser worked on more than 70 major construction projects, including Hoover Dam (see **HOOVER DAM**).



Kaiser Services

Henry Kaiser

Kaiser and Joseph W. Frazer founded the Kaiser-Frazer Corporation to build automobiles in 1946. In 1953, this corporation bought Willys-Overland Motors, Inc., and later stopped making pleasure cars in the United States.

Then, Kaiser formed Willys Motors to produce four-wheel-drive vehicles. Kaiser extended his interests to aviation, aluminum, steel, magnesium, and housing.

In 1956, he formed Kaiser Industries Corporation, which holds controlling interest in all his other companies. Kaiser became chairman of the board of this corporation.

V. E. CANGELOSI and R. E. WESTMEYER

KAISER WILHELM CANAL. See **KIEL CANAL**.

KAISER WILHELMSLAND. See **NEW GUINEA**.

KAKA. See **PARROT**.

KAKI. See **PERSIMMON**.

KALA AZAR, *KAH lah ah ZAH* R, is a disease caused by tiny parasites, called *Leishman-Donovan bodies* in honor of the two investigators who discovered them in 1903. *Kala azar* is Hindustani for *black fever*. Sometimes the disease is called *dum-dum fever*. The parasites are spread among people by sand flies, mosquitoes, tsetse flies, ticks, gnats, and other insects. The germs grow in the spleen, liver, and lymph nodes of human beings, causing these organs to enlarge. Persons with this disease have fever and anemia, and tend to bleed very easily. Doctors use antimony compounds and Stilbamide to treat *kala azar*. The disease causes many deaths among the people of Africa, the Mediterranean countries, and central Asia.

PAUL S. RHODES

KALAHARI DESERT, *KAH lah HAH* ree, is a dry African wasteland which covers about 200,000 square miles in Bechuanaland and South-West Africa. This basinlike desert lies about 3,000 feet above sea level. Some parts of the desert are covered with tufts of grass and scrubby trees. The region contains scant water supplies. A few

shallow ponds receive the rains that fall on the edges of the desert. Proposals have been made for a railroad and for irrigation projects in this area.

ELDRD D. WILSON

KALAKAUA, DAVID. See **HAWAII** (Famous Hawaiians); **LILIUOKALANI**, **LYDIA KAMEKEHA**.

KALAMAZOO, *KAL uh muh ZOO*, Mich. (pop. 82,089; alt. 755 ft.), lies on the Kalamazoo River in southwestern Michigan. It is located halfway between Detroit, Mich., and Chicago, Ill., 148 miles from each of the two cities. Kalamazoo covers over 23 square miles. For location, see **MICHIGAN** (color map).

The Indians named the nearby river *Kalamazoo* because of the bubbling springs in the water. *Kalamazoo* is an Indian word for *boiling pot*.

The city has many industries, of which the production of paper and paper products is chief. Other products include auto trailers, fishing tackle, machine tools, musical instruments, pharmaceuticals, taxicabs, truck transmissions, and ventilating systems. Celery and pansies are grown for commercial use on the surrounding marshlands.

The city is the home of Kalamazoo College and Western Michigan University. Kalamazoo has more than 20 primary and secondary schools. Cultural attractions in the city include a civic theater, an art center, a symphony orchestra, and a library-museum building. An art show, called *The Clothesline Art Show*, is held each June in Bronson Park. Kalamazoo has a municipal airport. Rail lines and highways also serve the city.

In 1959, Kalamazoo opened the nation's first permanent downtown shopping mall, closing off two blocks to provide a pleasant atmosphere for shoppers.

Fur traders established a post at Kalamazoo in the late 1700's, because the Kalamazoo River was easily forded at this point. Titus Bronson, the first permanent settler, arrived in 1829. Kalamazoo was incorporated as a village in 1843. It became the largest village in the United States before it received its city charter in 1884. The city grew rapidly because of its important location on the route between Detroit and Chicago. Paper and pharmaceutical manufacture began in the late 1800's. The city's airport was the first municipally owned and operated airport in Michigan. The seat of Kalamazoo County, Kalamazoo has a council-manager form of government.

WILLIS F. DUNBAR

KALAMAZOO COLLEGE is a coeducational liberal arts college at Kalamazoo, Mich. Founded in 1833, it is the oldest college in the state. It is privately controlled, but is connected with the Baptist Church. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

KALB, JOHANN DE. See **DE KALB, JOHANN**.

KALE, *kayl*, is a vegetable somewhat like cabbage, but with loose curly leaves instead of a head. These leaves are boiled or steamed and eaten alone or mixed with potatoes. Kale is also called *borecole* and *colewort*. Dwarf kale plants are only about 12 to 15 inches tall, while the tall-stem type may grow 24 to 30 inches high. In the United States most of the kale crop matures in fall.

Farmers store the grown plant, with soil attached, in hotbeds or cold frames. The leaves stay green and juicy for several months.

Kale has added value because it is a green vegetable readily available in winter. It provides one of the best



J. Horace McFarland

Kale Is a Member of the Cabbage Family. It has thick, crinkly leaves, which are boiled and served as greens.

sources of the important vitamins A, B, and C.

Scientific Classification. Kale belongs to the family *Crucifera*. It is genus *Brassica*, species *oleraceae*, subspecies *acephala*.

S. H. WITTMER

See also **VEGETABLE** (Planting Table for Vegetables).

KALEIDOSCOPE, *kuh LIE doh skohp*, is a small tube in which you can see beautiful colors and designs. It is usually about an inch in diameter and a few inches long. Both ends are closed, but one end has a small peephole to look through into the kaleidoscope.

The kaleidoscope works on the principle of multiple reflection. Two glass plates inside serve as mirrors. They go down the entire length of the tube and slant toward each other. At the far end of the tube are two more plates, one made of clear glass and the other of ground

glass. The clear glass is closer to the eyehole. Pieces of colored beads and glass are placed between the plates. The beads and glass are reflected in the mirrors. The ground glass throws the reflections in many directions, and beautiful patterns are formed. When the viewer turns the kaleidoscope, the patterns change.

Designers have used this toy to find new patterns for carpets, wallpaper, and various fabrics. Sir David Brewster (1781-1868) invented the kaleidoscope and patented it in 1817.

E. A. FESSENDEN

See also **REFLECTION**.

KALENDS, or **CALENDS**. See **MONTH**.

KALEVALA. See **FINLAND** (The *Aris*); **STORYTELLING** (Europe).

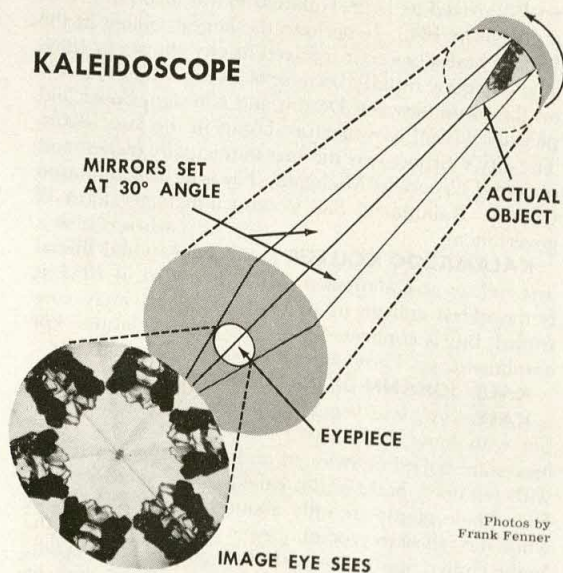
KALGOORLIE, *kal GOOR lih* (pop. 9,963), is an important gold-mining center in the southern part of Western Australia. For location, see **AUSTRALIA** (color map). It ranks as the third largest city in the state, and serves as a railway junction. Kalgoorlie is the home of the Western Australian School of Mines. Gold was discovered in the area in 1893. The rich mines of the region continue to yield important quantities of gold. The name *Kalgoorlie* is derived from the name of a common shrub, the *galgurl*.

G. M. H. CLARK

KALININ, *kuh LEE nin*, **MIKHAIL IVANOVICH** (1875-1946), was a leading Russian communist. From 1919 to shortly before his death, he held a high executive office in the Russian government, interpreted abroad as "President of the Soviet Union." Although Kalinin rose to a high position, he had little actual power. He was born in Tver (now Kalinin) province, near Moscow. At 18, he became a metalworker, and soon became active in revolutionary groups. Before the Russian Revolution, he was jailed often. He was exiled to the Caucasus, and later to Siberia. He helped plan the Bolshevik revolution of 1917.

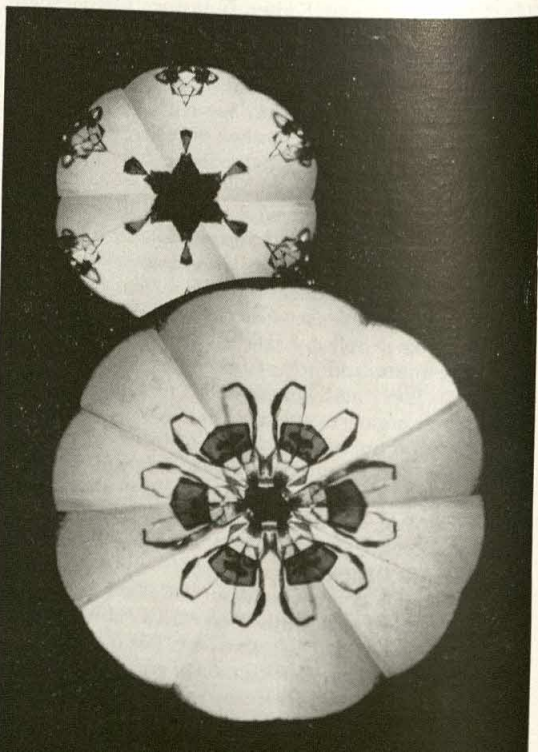
ALBERT PARRY

KALEIDOSCOPE



Photos by Frank Fenner

Peering Through a Kaleidoscope, the eye can see beautiful symmetrical patterns, *right*. A pair of mirrors in the tube, meeting at an angle, *above*, cause reflections of an object at the end of the tube which produce the symmetrical set of images.



KALININGRAD, *kuh LEE nin grad* (pop. 202,000), is located near the Baltic Sea, 366 miles northeast of Berlin. For location, see **RUSSIA** (color map). A canal connects it with Pillau, on the Bay of Danzig. One of the most important shipping centers of Europe, it became part of Russia after World War II. Before that, the city was the capital of East Prussia, called *Königsberg*.

KALMAR, UNION OF, was an attempt to unite the kingdoms of Norway, Sweden, and Denmark. Nobles of the three kingdoms proclaimed the union at a meeting in Kalmar, Sweden, in 1397, and drafted an act of union. The union failed when Norway refused to sign the act. See also **NORWAY** (Union with Denmark).

KALMIA. See **MOUNTAIN LAUREL**.

KALMUCK, *KAL muck*, is a member of a tribe of Mongoloid people. Early Kalmucks lived in central Asia. Today they are found in many parts of China, southwestern Russia, and western Siberia. A large group lives on the Astrakhan plains west of the mouth of the Volga.

For years the Kalmucks were nomads, or wanderers. But the Russian czars encouraged many of them to settle in permanent homes and become farmers. The Kalmucks are brave warriors and daring horsemen. Many belonged to the famous Cossack cavalry regiments of the Russian Army.

An average racially unmixed Kalmuck stands about 5 feet 4 inches tall. He has broad shoulders, straight black hair, and a round head. His face is flat and round, and his features resemble those of other Mongolian people of the East. Most of the Kalmucks are Buddhists, but a few are members of the Christian and Islamic religions.

WILTON MARION KROGMAN

See also **COSSACK**.

Kalmuck Women of Sinkiang, China, show whether or not they are married by their hairdress. The woman at the left wears a long switch of horsehair to show that she is a wife.

American Museum of Natural History



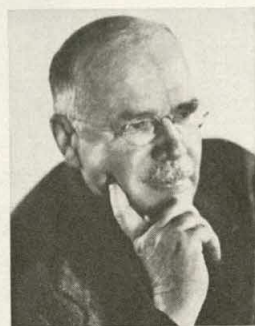
KALSOMINE. See **CALCIMINE**.

KALTENBORN, "H. V." HANS VON (1878-), an American radio commentator, gained wide recognition as the "father" of his profession. He delivered his first radio broadcast in 1922, during the days of the crystal set. Kaltenborn was born in Milwaukee, Wis., and served in the Spanish-American War. He joined the *Brooklyn Eagle* in 1902, but left in 1905 to enter Harvard University. He was graduated in 1909, and returned to

the newspaper. In 1924 he became the first regularly scheduled radio commentator. He began his network news broadcasts in 1930. Kaltenborn is the author of *Fifty Fabulous Years* (1950). PAUL MOLLOY

KAMA RIVER. See **VOLGA RIVER**.

KAMAKURA PERIOD in Japanese history lasted from 1185 to 1336. The *samurai*, or warrior class, dominated the imperial government, which had its capital at the city of Kamakura, near Yokohama. Art and literature underwent important developments during the period. Artists erected the giant *Daibutsu*, or Great Buddha, at Kamakura (see **BUDDHA** [picture]). See also **JAPAN** (The Shoguns); **SAMURAI**.



G. P. Putnam & Associates

H. V. Kaltenborn



Kamchatka Peninsula Lies West of the Aleutian Islands.

KAMCHATKA, *kam CHAT kuh*, **PENINSULA** is an eastern peninsula of Siberia that extends southward between the Bering Sea and the Sea of Okhotsk. It covers an area of 69,711 square miles. A range of volcanic mountains crosses it from north to south. The highest peak rises more than 15,000 feet above sea level. The peninsula has thick forests and rich mineral resources.

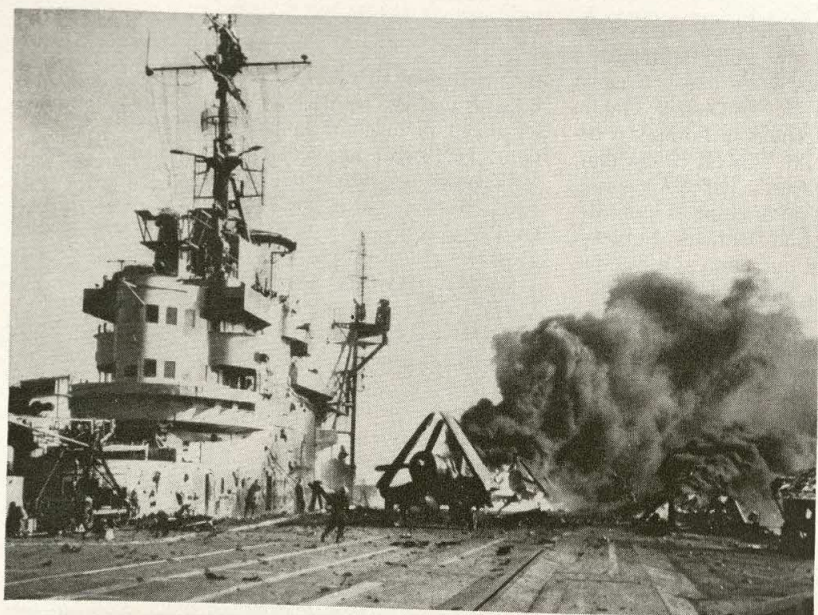
Fishing and hunting are the chief industries of the Kamchatka Peninsula. The region provides bear, sable, fox, beaver, otter, and seal fur. Its streams have many salmon. Russia has established a number of important crab fisheries on the west coast of the peninsula. About 9 out of 10 persons living on the peninsula are Russians. The others belong to Siberian tribes and include Kamchadals, Aleuts, and Lamuts. Petropavlovsk is the capital and chief port of the peninsula. It lies on the eastern coast.

THEODORE SHABAD

KAME, *kaym*, is a short ridge or hill that geologists believe was formed by streams emerging from below glaciers. Kames contain different strata of earth. They are made up chiefly of gravel and sand.

KAMEHAMEHA I. See **HAWAII** (Famous Hawaiians; History).

KAMERUN. See **BRITISH CAMEROONS**; **CAMEROUN**.



United Press Int.

Kamikaze Attacks by Japanese pilots caused great damage to Allied warships during World War II. This suicide plane crashed on the deck of a British carrier off the Sakishima Islands near Japan. It damaged the ship, but did not put it out of operation.

KAMIKAZE, *KAH mih KAH zee*, was the popular name given to suicide units of the Japanese armed forces during World War II. The Japanese called their suicide fliers the *Special Attack Force*. The name Kamikaze was used either for the fliers who purposely dived their planes into Allied warships, or for the suicide planes themselves.

The *baka bomb* was a special type of Kamikaze. The name was given to it by the Americans. *Baka* means *stupid* or *foolish* in Japanese. This was a glider propelled by a rocket tube in its tail, and equipped with high explosives. A large bomber carried the baka bomb close to its target. The bomb was released and its pilot guided it into a warship. The pilot and the glider were destroyed when the baka bomb exploded. Suicide boats and rafts carrying swimmers who held high explosives also attacked Allied ships.

Kamikaze attacks were first used on a large scale when American forces invaded the Philippines in October, 1944. In the invasion of Okinawa, the Japanese used more than 6,000 suicide planes. Only a few hundred succeeded in hitting a ship, but those that did caused great damage and many deaths. The Japanese planned their heaviest use of suicide units to block the Allied invasion of Japan. But they surrendered in August, 1945, before this happened.

See also JAPAN (The Shoguns).

KAMLOOPS, British Columbia (pop. 9,096), lies at the junction of the North and South Thompson rivers. *Kamloops* is an Indian word that means *the meeting of the waters*. The city is 160 miles northeast of Vancouver. For location, see BRITISH COLUMBIA (color map).

Kamloops serves as an important transportation hub in a farming and ranching region in the south-central part of the province. It is a shipping point for Okanagan Valley fruit and Cariboo cattle. The city gave its name to the famous Kamloops trout.

The North West Company opened a trading post at Kamloops in 1812. The city was incorporated in 1893. It has a mayor-council government. RODERICK HAIG-BROWN

KANAKA, *KAN uh kuh*, or *kuh NAK uh*, is the name for local plantation workers on many islands in the Pacific. The term *Kanaka* is used in the same sense as the word *coolie* is used, for laborers in the Orient. Kanaka in Hawaiian means *men*.

KANAT. See IRAN (Agriculture).

KANAWHA, *kuh NAW wuh*, **RIVER** is one of the chief waterways of West Virginia. From Point Pleasant, where the Kanawha joins the Ohio River, steamers can travel upstream for about 100 miles, almost to the mouth of the Gauley River. The Gauley is the river's main branch. The Kanawha rises between the Blue Ridge and Iron Mountains of North Carolina. In North Carolina, Virginia, and upper West Virginia, it is called the New River. The river flows northeast through western Virginia, and then turns northwest to cross West Virginia and part of the Allegheny Mountains. The river is called the Kanawha downstream from the junction of the Gauley. The valley of the Kanawha is a leading chemical-manufacturing region.

F. P. SUMMERS

See also WEST VIRGINIA (color picture, Stern-Wheelers).

KANCHENJUNGA, MOUNT. See MOUNT KANCHENJUNGA.

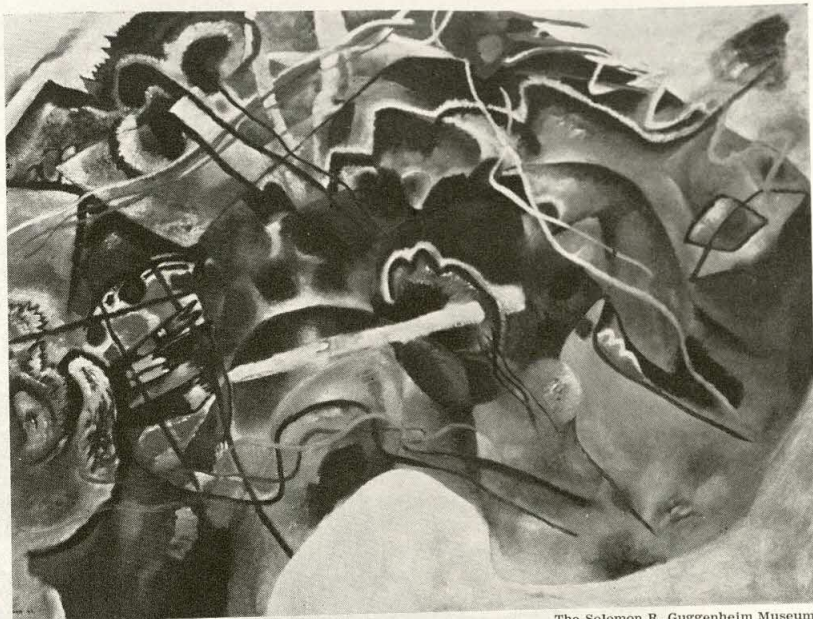
KANDAHAR, *KAN duh hahr* (pop. 77,186), is Afghanistan's second largest city. It lies on a low plain in the southern part of the country. For location see AFGHANISTAN (color map).

A 27-foot-high wall surrounds the old section of this ancient city. Gray houses made of mud and stone line the narrow, twisting, unpaved streets. The city's modern sections lie outside the walls. Kandahar is the chief trading center for an area that produces wheat, rice, cotton, sugar, sesame, fruit, and wool. The city has food-processing and textile factories. Mining of gold and semiprecious stones is also an important industry.

Alexander the Great founded Kandahar during the 300's B.C. Ahmad Shah, the first ruler of modern Afghanistan, made it the country's capital in 1747. His son moved the capital to Kabul in 1773.

PAUL L. HANNA

Wassily Kandinsky used an imaginative variety of free form styles in his early works. This untitled abstract picture, painted in 1913, hangs in the Solomon R. Guggenheim Museum in New York City.



The Solomon R. Guggenheim Museum

KANDINSKY, WASSILY (1866-1944), is generally considered the father of abstract painting and particularly of the international art movement called abstract expressionism. He wrote about his paintings: "The observer must learn to look at [them] . . . as a representation of *mood*, and not as a representation of *objects*."

Kandinsky was born in Moscow. He started painting when he went to Germany at the age of 30. Until about 1920, he used bright, pure colors and free, spontaneous line and form. But after a period in Russia, ending in 1921, he began to paint carefully calculated compositions of geometric shapes. His *Composition* (1914) appears in color in the PAINTING article. Kandinsky taught at the famous design school, the Bauhaus, in Germany from 1922 to 1933 (see BAUHAUS).

GEORGE D. CULLER

KANE, PAUL (1810-1871), a pioneer Canadian painter, was the first artist of importance to paint North American Indians. He traveled thousands of miles in canoes, on horseback, and on snowshoes in order to study his Indian subjects. The result was a series of pictures of great artistic and historical value. He also published an account of his travels, *Wanderings of an Artist Among the Indians of North America* (1859). This account describes in a faithful and interesting manner the habits and customs of the Plains and the Pacific Coast Indians he saw on his travels.

Kane was born in County Cork, Ireland, and came with his parents to Canada in 1818 or 1819. He studied art at Upper Canada College, and in Italy and other European countries.

W. R. WILLOUGHBY

Collection The Art Gallery of Toronto

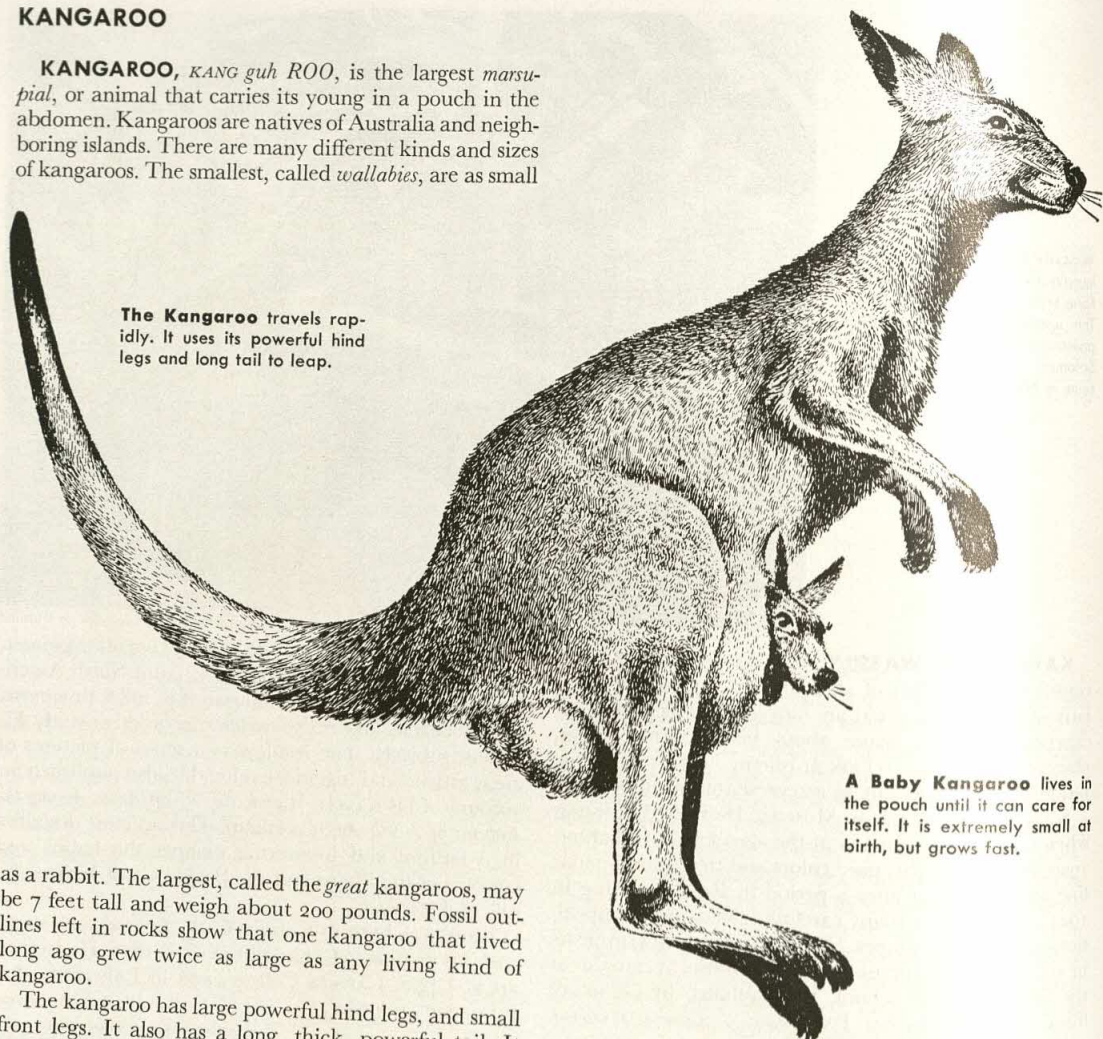
Canadian Artist Paul Kane first sketched *Indian Encampment on Lake Huron* while traveling through the Great Lakes region. He later completed this and other paintings in oil.



KANGAROO

KANGAROO, *KANG guh ROO*, is the largest marsupial, or animal that carries its young in a pouch in the abdomen. Kangaroos are natives of Australia and neighboring islands. There are many different kinds and sizes of kangaroos. The smallest, called *wallabies*, are as small

The Kangaroo travels rapidly. It uses its powerful hind legs and long tail to leap.



A Baby Kangaroo lives in the pouch until it can care for itself. It is extremely small at birth, but grows fast.

Courtesy of the B. F. Goodrich Company

as a rabbit. The largest, called the *great kangaroos*, may be 7 feet tall and weigh about 200 pounds. Fossil outlines left in rocks show that one kangaroo that lived long ago grew twice as large as any living kind of kangaroo.

The kangaroo has large powerful hind legs, and small front legs. It also has a long, thick, powerful tail. It moves in a series of leaps, using its hind legs and tail. The leaps may be only a few feet long, or several times as long as the animal. Large kangaroos can hop along at speeds up to 25 miles an hour. Some kangaroos live in trees, and can leap as far as 50 feet to the ground. The kangaroo usually sits in a watchful, upright position, resting on its tail and two hind legs. When grazing, it may drop on all fours. The animal's head is small, and looks like a deer's. Most species have large ears that stand straight up, and a long muzzle like a deer.

Baby kangaroos are called *joey*s. There may be three in a litter, but rarely do the parents raise more than one. Joeys are very tiny and undeveloped when they are born. Usually they are only about an inch long. But they can always find their own way into the mother's pouch, which is like a pocket in her abdomen. There she feeds and cares for them until they are able to hop about with their parents. They may remain in the pouch for weeks, and sometimes as long as 6 months.

The kangaroo is timid, and does not like to attack other animals. It depends on its keen sight, hearing, and smell, and on its great speed to escape from its enemies. But, if cornered, it will defend itself vigorously. It can strike hard blows with its strong hind legs, while it sup-

ports itself on its powerful tail. The kangaroo's feet make good weapons. Each foot has four toes, one of which has a long claw that is especially dangerous. Kangaroos are gentle in captivity. They can be tamed, and have been trained for circuses. Kangaroos live about 15 years.

Kangaroos do not live in any one place, but travel from place to place in groups, called *mobs* . At one time thousands of kangaroos traveled in these mobs. But today the mobs are quite small.

The kangaroo eats herbs and grasses. It has very sharp teeth, and clips the vegetation closer to the ground than do most grazing animals. For this reason kangaroos have become a nuisance to stock raisers, and have been killed. Not many of the animals remain. They are also hunted for their flesh, which is used for food, and for their hides, which can be made into leather.

The wallaby is a small kangaroo. Wallabies have strong hind legs and tails like those of the larger species, but are often brightly colored. The *hare wallaby* is less than 2 feet long, while the *red-necked wallaby* may grow to 3½ feet. The *spur-tailed wallaby* has a horny growth,

like a spur, on the end of its tail. Wallaby hides are used for fine shoes, gloves, and bags, and some people consider the flesh of these animals a delicacy.

The *wallaroo*, or rock kangaroo, is a large, powerful kangaroo with thick gray fur. It roams the mountain ranges of Australia.

Scientific Classification. Kangaroos belong to the family *macropodidae*. Most species, including the wallaroo, are of the genus *Macropus*. The red-necked wallaby is *M. ruficollis*. The hare wallaby belongs to the genus *Lagorchestes*, and the spur-tailed wallaby to the genus *Onychogale*.

ROBERT T. HATT

See also ANIMAL (color picture, Australia, New Guinea, and Tasmania); MARSUPIAL.

KANGAROO APPLE. See SOLANUM.

KANGAROO COURT is a slang term for an unauthorized gathering of persons who take the law into their own hands by acting as a court. Examples of kangaroo courts include mock courts held by vagabonds, prisoners in a jail, or frontier vigilantes. Such groups usually disregard the principles of law and justice, and impose unfair or intemperate punishments.

The term is thought to have arisen in Kansas or Ohio. Pioneer judges traveled from place to place handling trials summarily, and were paid with the fines from convicted prisoners. These leaps from place to place gave rise to the term *kangaroo court*. Critics of lawfully appointed courts have often used the term to indicate their dissatisfaction with the judgments of such courts.

ARTHUR E. SUTHERLAND

KANGAROO RAT is a small gnawing animal that leaps like a kangaroo, using its long tail and hind legs. A single leap may cover six feet or more. This animal lives in the deserts of western North America. Neither a rat nor a kangaroo, it resembles the jerboa (see JERBOA). The kangaroo rat has long, silky fur. It uses its small forefeet to hold food.

The kangaroo rat is also called *pocket rat*, because it has cheek pouches for carrying food. Several pairs of the animals sometimes live together in long burrows, where they stay in the daytime. At night they come out to feed on seeds and desert plants. These animals do not

drink water, so they can live in dry places where other creatures would die of thirst.

Scientific Classification. Kangaroo rats belong to the family *Heteromyidae*. The many different species form the genus *Dipodomys*.

STANLEY P. YOUNG

KANPOLIS DAM is a federal flood-control project on the Smoky Hill River about 19 miles west and 16 miles south of Salina, Kan. The earth-fill dam is 131 feet high and 15,810 feet wide. The reservoir has a storage capacity of about 450,000 acre-feet of water which is used for flood control, and 50,000 acre-feet for recreation and stream-flow regulation. The project was built in 1948 by the United States Army Corps of Engineers. See also DAM.

T. W. MERMEL

KANPUR, *KAHN poor*, or **CAWNPORE**, *KAWN pohr* (pop. 636,443), is the largest city in Uttar Pradesh, a state in northern India. Kanpur lies on the southern bank of the Ganges River, about 600 miles northwest of Calcutta. For location, see INDIA (color map).

Kanpur serves as a trading and manufacturing center for leather goods and cotton, woolen, and silk materials. The city is also an important Indian rail and highway center.

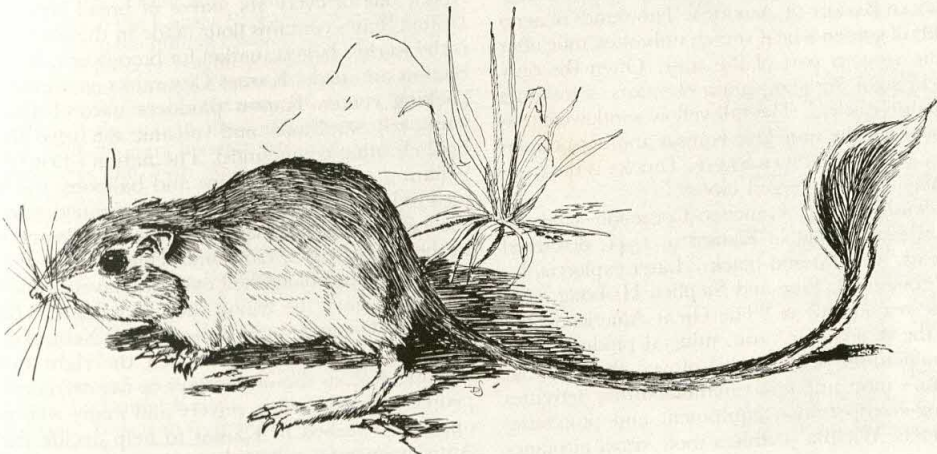
An Indian leader ceded Kanpur, then called *Cawnpore*, to the British East India Company in 1801. Cawnpore grew rapidly from a small village into a thriving commercial city. In 1857, Indians massacred the entire British population of the city during the Sepoy Rebellion (see SEPOY REBELLION). Its name was officially changed to Kanpur in 1948.

ROBERT I. CRANE

KANSA, or **KAW**, **INDIANS** were a Plains tribe who lived along the Kansas River in eastern Kansas. Both the river and the state were named after them. The Kansa grew corn and other crops, and hunted the buffalo that roamed over the western plains. They lived in earth lodges made of wooden posts and woven mats banked with soil. The tribe sold their Kansas lands to the government in 1873, and moved to a reservation in Oklahoma. Diseases such as smallpox took a heavy toll, and few Kansa remain today.

The Kangaroo Rat lives in the deserts of western North America. This small rodent can leap through the air like a kangaroo.

It has powerful hind legs, and a long tail to balance itself. The animal's large eyes are well suited to seeing at night.

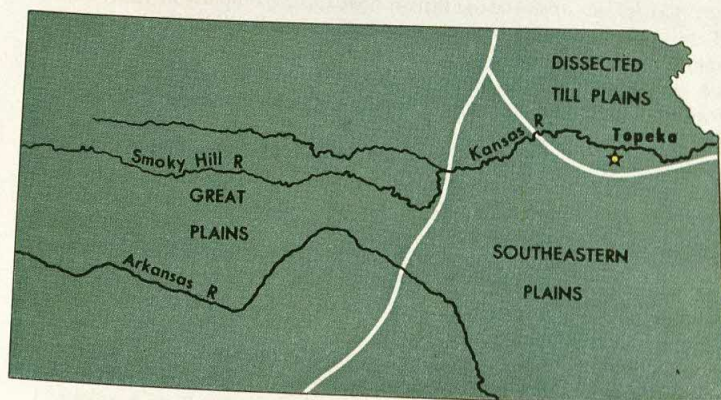


KANSAS

The Sunflower State



The State Seal



Land Regions of Kansas

KANSAS, *KAN-zus*, a Midwestern state in the center of North America, produces the biggest wheat crop in the United States. It is often called **THE WHEAT STATE** or **THE BREAD BASKET OF AMERICA**. Thousands of acres of flat fields of golden wheat stretch unbroken mile after mile in the western part of the state. Often the only buildings in sight are giant grain elevators, sometimes called "prairie castles." The tall yellow sunflowers that grow throughout the state give Kansas another popular nickname, **THE SUNFLOWER STATE**. Topeka is the capital and Wichita is the largest city.

The Spanish explorer Francisco Coronado who unsuccessfully sought gold in Kansas in 1541, described the region as "very fat and black." Later explorers, including Zebulon M. Pike and Stephen H. Long, considered the region part of "The Great American Desert." But the state's rich farms, mineral products, and busy manufacturing centers have proved them wrong.

The state's most important manufacturing activities are making transportation equipment and processing farm products. Wichita produces more small airplanes

than any other city in the world, and also makes large military planes. Kansas leads the states in making flour. About one of every six loaves of bread baked in the United States contains flour made in the state. Wichita is the world's largest market for broomcorn, from which brooms are made. Kansas City ranks as a major meat-packing center. Kansas produces natural gas, petroleum, salt, sandstone, and volcanic ash (used in household cleaning compounds). The nation's first supply of helium gas, used in airships and balloons, was discovered at Dexter in the early 1900's. Scientists have found the fossil remains of many prehistoric birds and reptiles in the chalk beds of Gove and Trego counties.

Fighting and bloodshed over the slavery issue during the 1850's gave the region the nickname of "Bleeding Kansas." Congress passed the Kansas-Nebraska Act in 1854, giving settlers in the area the right to decide whether Kansas should be slave or free territory. Many people who believed in slavery and many who strongly opposed it rushed to Kansas to help decide the issue. Antislavery men called themselves *Jayhawkers*, giving

Kansas another nickname, **THE JAYHAWKER STATE**. John Brown became a famous antislavery leader in the fierce warfare that raged for several years. His massacre of a small band of proslavery Missourians at Osawatomie won him the name of "Old Osawatomie Brown." A few years later, William C. Quantrill organized a band of proslavery guerrilla troops that raided antislavery towns and farms in Missouri and Kansas.

In the 1870's, cowboys drove great herds of longhorn cattle from Texas to railroad stops in Kansas. The cattle were sold and loaded on trains at wide-open "cow towns" such as Abilene, Dodge City, and Wichita. Wyatt Earp, "Wild Bill" Hickok, and other law officers won fame in Kansas for administering quick justice with their six-guns. Many outlaws who "died with their boots on" were buried in such cemeteries as Dodge City's "Boot Hill."

The name *Kansas* came from the Kansa, or Kaw, Indians who once roamed the prairies of the region. *Kansa* is an Indian word that means *People of the South Wind*. Kansas is sometimes called **THE CENTRAL STATE** because of its position in the middle of North America.

FACTS IN BRIEF

Capital: Topeka (since 1861). *Earlier capitals* (territorial): Fort Leavenworth (1854); Shawnee Mission, now Shawnee (1854, 1855, 1856); Pawnee (1855); Lecompton (1857, 1858); Lawrence (1858, 1859); Topeka (1859-1861).

Government: *Congress*—U.S. Senators, 2; U.S. Representatives, 6. *Electoral votes*, 8. *State Legislature*—senators, 40; representatives, 125. *Counties*, 105. *Voting Age*, 21 years.

Area: 82,264 square miles (including 216 square miles of inland water), 14th in size among the states. *Greatest distance:* (east-west) 400 miles; (north-south) 200 miles.

Elevation: *Highest*, on western state line in Wallace County, 4,135 feet above sea level; *Lowest*, along the Verdigris River in Montgomery County, 700 feet above sea level.

Population: 2,178,611 (1960), 28th among the states. *Density*, 26 persons to the square mile. *Distribution*, urban, 61 per cent; rural, 39 per cent.

Chief Products: *Agriculture*, beef cattle, corn, flax, soybeans, wheat. *Mining*, bituminous coal, lead, natural gas, petroleum, zinc. *Manufacturing and Processing*, fabricated metals, flour, meat and meat products, oil-field and coal-mining machinery, transportation equipment.

Statehood: Jan. 29, 1861, the 34th state.

State Seal: Pioneers entered Kansas from the East, represented by the rising sun. The steamboat recalls early navigation on the Kansas River, and the beginning of commerce. The oxen pulling covered wagons represent the thousands of pioneer wagon trains that crossed the region. The Indians hunting a herd of buffalo symbolize the days when tribes lived in the area. The log cabin and the farmer plowing a field illustrate the beginning of agriculture. The 34 stars beneath the state motto show that Kansas was the 34th state to enter the Union. Adopted in 1861.

State Flag: The state seal appears in the center of a dark blue rectangle. The band of lettering that surrounds the seal has been replaced on the flag by a bar, or wreath, that signifies the Louisiana Purchase, of which Kansas was a part. The crest at the top pictures the state flower, the sunflower. Adopted in 1927.

State Motto: *Ad Astra per Aspera* (To the Stars Through Difficulties).

State Song: "Home on the Range." Words by Brewster Higley; music by Daniel Kelley.

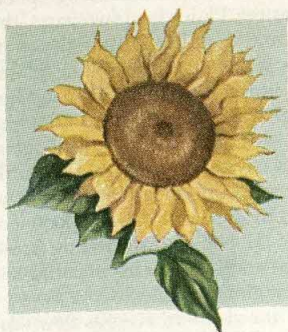
State Animal: American buffalo.



The State Flag



The State Bird
Western Meadow Lark



The State Flower
Sunflower



The State Tree
Cottonwood

KANSAS

For the relationship of Kansas to other states in its region, see MIDWESTERN STATES.

The Land and Its Resources

Location and Size. Kansas has a rectangular shape except for its northeastern corner. Here the winding Missouri River gives the state's border an irregular appearance. The *Color Map* shows that Nebraska lies to the north of Kansas, Missouri to the east, Oklahoma to the south, and Colorado to the west. Kansas covers 82,264 square miles.

The geodetic center of North America is in Kansas, 12 miles north of Lucas (see GEODETIC CENTER OF NORTH AMERICA).

Land Regions. Most of Kansas is a rolling plain that slopes upward from east to west. The state has three main land regions: (1) the Dissected Till Plains, (2) the Southeastern Plains, and (3) the Great Plains.

The Dissected Till Plains cover the northeastern corner of the state. They lie generally north of the Kansas River and east of the Big Blue River. Some Kansans call this area *The Glaciated Region*, because it lay in the path of glaciers during the Ice Age. These glaciers left deposits of rich soil. Rivers soon cut into the fertile area, leaving high bluffs. The area is sometimes called *The Bluestem Region*, because so many bluestem grasses grow here. It includes many heavily wooded sections.

The Southeastern Plains cover the area south of the Dissected Till Plains to the Oklahoma border. They extend as far west as Barber County in the south and Washington County in the north. Much of the region is gently rolling grazing country. The land rises to a few low hills, but there are no mountains. Geographers often divide the Southeastern Plains into two parts, the Osage Plains in the east and the Flint Hills in the west. The Osage Plains are a series of gently rolling plains formed by the erosion of limestone and shale. The Flint Hills, west of the Osage Plains, are flinty limestone ridges that have resisted erosion for thousands of years.

The Great Plains region covers the western two thirds of Kansas. It slopes upward from an average height of 2,000 feet above sea level in the east to about 4,000 feet on the Colorado border. It has slightly rolling land, with small canyons in the southwest. This area has less rainfall than the eastern regions.

Rivers and Lakes. All the rivers in Kansas flow east or southeast. The Kansas and Arkansas rivers and their tributaries make up the two main river systems. The Kansas, or Kaw, River drains the northern part of the state, and the Arkansas River drains waters much of the southern section. The Missouri River on the northeast border is the only major waterway. Other important rivers include the Big Blue, Republican, Saline, Solomon, Smoky Hill, Neosho, and Verdigris.

Kansas has about 100 lakes, most of them man-made. They are used for irrigation and drinking water, and as recreational centers. Kirwin Reservoir, on the North Fork of the Solomon River in north-central Kansas, is the largest body of water in the state. It has an area of 5,000 acres. Other large lakes include Barton, Cedar Bluff, Fall River, Kanopolis, McKinney, and Webster.

Natural Resources. Fertile soil which produces excellent crops is the most valuable natural resource.

Soil. Most of Kansas has a loamy, fertile soil suitable for growing many kinds of crops. The northeastern region has the richest soil. This soil, called *chernozem*, is black or dark brown and contains large amounts of humus. Central Kansas, once covered by an ancient inland sea, also has some of this fertile soil. The soil of western Kansas is reddish brown, with a higher sand content. Southwestern Kansas has some sand dunes.

Three fourths of Kansas, or about 40,000,000 acres, has been damaged by erosion. Water erosion has scarred thousands of acres in the eastern and northern sections. Wind erosion has carried off much topsoil in the western section. Severe droughts in the 1930's and 1950's taught Kansans the importance of soil and water conservation. The state and federal governments built many artificial lakes and ponds to hold water and prevent erosion. Farmers use special methods of farming, such as terracing and contour plowing, to conserve soil and water. They plant belts of trees called *shelter belts* to help hold water on farm lands.

Minerals. Petroleum and natural gas are found in the southwestern, southeastern, and central areas. Heavy oil- and gas-producing counties include Kearny, Finney, Morton, Seward, Butler, Cowley, McPherson, Marion, Rice, Sedgwick, Reno, Barton, Ellis, Stafford, Russell, and Clark. Other valuable minerals include chalk, clays, coal, gypsum, lead, salt, volcanic ash (pumicite), and zinc. About five trillion tons of salt, enough to cover Kansas with a layer of salt 37 feet deep, lie underground in the state.

Forests. Trees that grow throughout Kansas include the red cedar, oak, elm, ash, hickory, hackberry, willow, black walnut, and sycamore. Cottonwood and boxelder trees grow chiefly in the moist river valleys of eastern Kansas, but some are found in all sections.

Plant Life includes nearly 200 kinds of grasses. Tall grasses, especially the bluestem, grow in the eastern area. Shorter types, such as buffalo grass, are found in the west. Tumbleweeds grow throughout western Kansas. In autumn, these ball-shaped grass plants break away from their roots and are tumbled about by the wind. Sunflowers are found in all parts of Kansas. Other wild flowers include the aster, clover, columbine, daisy, goldenrod, sweet William, thistle, verbena, and wild morning-glory or bindweed.

Animal Life. Large herds of American buffalo, or bison, once roamed the plains of Kansas. Hunters had killed most of them by the 1870's. Deer, bears, antelopes, and other large game animals disappeared in the same way. Among the smaller animals are rabbits, squirrels, muskrats, coyotes, opossums, and raccoons.

Birds include goldfinches, robins, blue jays, cardinals, meadow larks, hairy woodpeckers, and several kinds of hawks. Game birds, such as quail, chukar partridges, pheasants, ducks, geese, and prairie chickens, live throughout the state. Fish in the streams and lakes include bass, channel cat, crappie, and rock bass.

Climate. Kansas winters are cold and summers quite hot. The average January temperature is 32° F., and July temperatures average 77° F. Lebanon recorded the state's lowest temperature, -40° F., on Feb. 13, 1905. Fredonia had the highest temperature, 121° F., on July 24, 1936.

Northern Kansas is always cooler than the southern section. Burr Oak, in northern Jewell County, has an

average January temperature of 26° F., and an average July temperature of 79° F. Wellington, in southern Sumner County, has an average January temperature of 33° F. Its average July temperature is 83° F.

Kansas has an uneven rainfall. The annual average varies from 35 inches in the east and 26 inches in the central section to 19 inches in the west. Snowfall averages about 17 inches a year. The growing season varies from 200 days in the southeast to about 160 days in the northwest.

Life of the People

The People. The U.S. Bureau of the Census reported that Kansas had a 1960 population of 2,178,611. This was a 14 per cent increase over the 1950 figure, 1,905,299. Over half the people live in cities and towns.

About 98 of every 100 Kansans were born in the United States. Most of the foreign-born came from England, Germany, Russia, and Scandinavian countries.

The Methodist and Roman Catholic churches have the largest memberships in Kansas. Other large religious groups include the Disciples of Christ, Lutheran, Baptist, Presbyterian, United Brethren, United Church of Christ, and Episcopalian.

Cities. Eastern Kansas has many more towns and cities than the western half of the state. About 30 cities have populations of more than 10,000. About 12 of every 100 Kansans live in Wichita, the largest city. Other large cities include Kansas City, Topeka, Hutchinson, Salina, and Lawrence. Great Bend, named for its location on the Arkansas River, is the largest city in western Kansas. See the separate articles on Kansas cities listed under *Related Articles* at the end of this article.

Country Life. Most farmers in eastern Kansas own their own land. Tenant farming is common in the wheat-growing region of the western section. "Suitcase farming" is also practiced in this region. All the people do not live the year around on the farms, but many pack their suitcases and come only during the growing season. Kansas has about 440 towns with fewer than 1,000 persons. Many of these towns have a small grain elevator, several stores and churches, and a farm-implement shop.

Work of the People

About 23 of every 100 employed Kansans work in agriculture, but manufacturing, which employs about 17 of every 100, is the most important industry. Mining, which ranks third in the value of its products, employs only 2 of every 100 workers. About 19 of every 100 have jobs in wholesale and retail trade.

Agriculture. Eastern Kansas is chiefly a general-farming area with many small truck farms. Farmers in the drier western section own large cattle ranches and wheat farms. The state has more than 120,000 farms. The average farm covers about 416 acres.

Wheat. Kansas leads the states in growing wheat, and ranks second only to the Canadian province of Saskatchewan in North American wheat production. It produces about 148,000,000 bushels of wheat a year, more than a tenth of the total crop grown in the United States. Wheat grows in every county, but the western two thirds of the state is the most important wheat belt. Most of the country's winter wheat comes from this area. Farmers plant winter wheat in late summer or early

autumn. Moisture from the winter snow and rain makes the wheat come up early in spring. Winter wheat was first planted in Kansas in the 1870's when Mennonite immigrants brought a new variety, called Turkey Red, from southern Russia. Bernhard Warkentin, a Mennonite, brought several thousand bushels in the 1880's.

Other Field Crops. Farmers also raise corn in every county, with the greatest production in the northeast. Leading corn-producing counties include Brown, Nemaha, Marshall, Washington, and Republic. Other important products of the eastern region include alfalfa and alfalfa seed, barley, oats, soybeans, and rye. Flax is the chief crop in the southeastern area.

The western third of Kansas is too dry for such crops as corn and flax. Farmers in this area raise broomcorn, a kind of sorghum, and other specialized crops (see *DRY FARMING*). Farmers ship their broomcorn to Wichita, the largest broomcorn market in the world, where some of the sorghum is made into brooms. Farmers also raise grain sorghums throughout central Kansas. Irrigation in the Arkansas River Valley makes it possible for farmers to grow sugar beets, especially in Finney, Kearny, and Pawnee counties.

Fruits and Vegetables. Apple growing is a leading industry in Doniphan County in the northeastern corner of the state. This county also ranks first in the state in the production of strawberries, which are grown throughout eastern Kansas. Farmers raise large quantities of grapes in the northeast, and in Sedgwick County in central Kansas. Other fruit crops include cherries, peaches, pears, and plums.

Truck farms in eastern Kansas produce large potato crops and many varieties of vegetables for markets in nearby cities. Melons and various vegetables come from the Kansas River Valley. Nurseries produce plant, vegetable, and fruit seedlings in Franklin, Shawnee, Johnson, Sedgwick, and Doniphan counties.

Livestock. Natural grazing land covers almost a third of the state. Kansas ranks fourth in raising beef cattle. The largest number of cattle for slaughter come from the northeastern region. Kansans raise horses and mules in the northeastern and south-central counties. Sheep raising is concentrated chiefly in central Kansas, where farmers also raise many turkeys. Eastern and central Kansas have many poultry and dairy farms.

Mining. Petroleum accounts for more than half of the state's mineral production. Producing oil wells have been drilled in almost every section, particularly in the southeastern, southwestern, and central regions. Natural gas ranks second to oil in value. Most of the natural gas comes from wells in southwestern Kansas.

Cherokee County produces large quantities of zinc and lead. A by-product of these mining operations is a mineral waste called *chat*. It is used in road building and in making concrete. Most of the state's bituminous (soft) coal comes from the southeastern region. Salt is mined in the central and western areas. Miners also work large deposits of volcanic ash in Meade, Sheridan, Rawlins, Wallace, and Comanche counties. The ash is used in making concrete and cleaning compounds.

Sandstone comes chiefly from Marshall, Barber, and Comanche counties. Eastern Kansas produces limestone, and miners dig chalk from large beds in the cen-

KANSAS (Map Index)

Population

2,178,611	1960
1,905,299	1950
1,801,028	1940

Physical Features

Arkansas R.	E 3
Bear Creek	E 2
Beaver Creek	E 5
Big Blue R.	C 7
Big Cow Creek	D 5
Big Creek	D 4
Big Slough Creek	A 5
Blue Soldier Creek	C 8
Blue Hill	C 5
Blue Hills	C 5
Blue Mound	C 4
Bluff Creek	E 4
Bluff Creek	E 5
Buckner Creek	D 4
Buffalo Creek	C 5
Cedar Bluff Reservoir	D 4
Cheyenne Bottoms (Swamp Area)	D 5
Chikaskia R.	E 6
Chisholm Creek	A 5
Cimarron R.	E 3
Cottonwood R.	D 6
Cowskin Creek	B 5
Crooked Creek	E 3
Delaware R.	C 8
Dry Creek	B 5
Elk R.	E 7
Fall R.	E 7
Fall River Reservoir	E 7
Great Bend Sand Land	E 7
Grouse Creek	E 4
Hackberry Creek	D 3
Highest Point in Kansas	D 1
Indian Creek	B 8
Indianola Creek	A 6
Kanopolis Reservoir	D 2
Kansas R.	D 7
Kirwin Reservoir	C 4
Labbette Creek	E 8
Ladder Creek	D 2
LaMcKinney	E 2
Little Arkansas R.	D 6
Little Beaver Creek	C 2
Little Blue R.	B 6
Little Osage R.	E 9
Lyons Creek	D 7
Marais des Cygnes (Osage) R.	D 8
Medicine Lodge R.	E 4
Mill Creek	B 7
Mill Creek	C 6
Mill Creek	C 7
Missouri R.	D 8
Mt. Jesus	E 4
Mule Creek	E 4
Neosho R.	D 7
Ninnescah R.	E 6
North Fork	E 6
South Fork	E 5
Pawnee R.	D 3
Pottawatomie Creek	D 8
Prairie Dog Creek	B 7
Quivera Lake	D 8
Rattlesnake Creek	E 4
Republican R.	C 6
South Fork	C 2
Round House (Mtn.)	D 4
Round Mtn.	D 4
Saline R.	C 4
Salt Fork Creek	E 4
Salt Marsh	D 5
Sand Hills	E 2
Santa Fe Lake	B 6
Sappa Creek	C 3
Middle Fork	C 2
South Fork	C 2
Smoky Hill R.	D 4
North Fork	C 2
Smoky Hills	C 4
Sumner R.	C 6
North Fork	C 3
South Fork	C 3
Spring Creek	B 5
State Lake	C 6
Turkey Creek	B 8
Vergidris R.	E 8
Wakarusa R.	D 8
Walnut Creek	D 3
Walnut R.	D 3
Webster Reservoir	C 4
West Emma Creek	D 6
White Rock Creek	C 5
White Woman Creek	D 2
Whitewater R.	E 6
Wyandotte County Lake	A 7

Cities

Abbyville, 118	E 5
Abilene, 6,746	D 6
Acres, 35	D 6
Ada, 155	C 6
Adams, 42	E 5
Admiral, 149	D 7
Advantage	E 3
Agenda, 124	C 7
Agra, 277	C 8
Agriola, 29	D 6
Alamota, 35	D 3
Albert, 221	D 3
Alben, 239	D 6
Aleppo, 20	E 5
Alexander, 153	D 6
Aliceville, 100	D 4
Allen, 205	D 8
Alma, 838	C 7

Almena, 555	C 4
Alta Vista, 400	D 7
Altamont, 672	E 8
Altamont, 299	C 5
Altamont, 390	C 5
Americus, 300	D 7
Andale, 432	E 6
Andover, 186	B 6
Anthony, 2,744	E 5
Antonino, 50	D 4
Arcadia, 507	E 9
Argonia, 507	E 9
Arkansas City, 14,262	B 6
Arlington, 466	E 5
Arma, 1,296	E 9
Arnold, 120	D 3
Arrington, 100	C 8
Arvonia, 105	D 8
Ash Grove, 105	D 8
Ashland, 1,312	E 4
Ashton, 40	E 6
Assaria, 322	E 6
Atchison, 12,529	C 8
Athol, 140	C 5
Atlanta, 267	E 7
Attie, 495	E 5
Atwood, 1,906	E 2
Auburn, 110	D 8
Augusta, 6,434	B 7, E 8
Aurora, 150	C 6
Axtell, 493	C 7
Baileville, 200	C 7
Baldwin City, 1,877	D 8
Bancroft, 40	C 8
Barclay, 50	C 8
Barnard, 205	C 5
Barnes, 247	C 7
Bartlett, 137	E 8
Bassett, 67	E 8
Baxter, 76	D 6
Baxter Springs, 4,498	E 9
Bazaar, 40	E 9
Bazine, 429	E 9
Beardsley, 50	C 2
Beattie, 314	C 7
Beaumont, 150	E 7
Beaver, 125	D 5
Beeler, 100	D 3
Bellaire, 50	D 3
Belle Plaine, 1,579	E 5
Belleville, 2,940	C 6
Belmont, 200	E 6
Beloit, 8,337	C 5
Belpre, 211	E 4
Beldenville, 125	E 4
Belvue, 179	C 7
Benedict, 128	E 8
Bendena, 90	E 8
Bennington, 535	C 6
Bentley, 204	E 6
Benton, 452	A 6, E 6
Bern, 206	C 8
Berwyn, 70	D 8
Bethel, 100	C 8
Beverly, 199	C 7
Big Bow, 100	E 2
Bigelow, 120	C 7
Bird City, 678	C 2
Birds, 291	D 4
Black Wolf, 32	D 5
Blaine, 75	C 7
Blair, 75	C 8
Bloom, 100	E 2
Blue Mound, 319	D 4
Blue Rapids, 1,426	C 7
Bluff City, 152	E 6
Boone, 234	C 4
Bonair Springs, 3,171	B 7, C 9
Brazilton, 250	E 9
Brewster, 317	C 2
Bronson, 354	E 8
Brookville, 246	D 6
Brown, 90	C 6
Brownell, 118	D 4
Bucklin, 752	E 4
Bucyrus, 125	D 9
Buffalo, 422	D 9
Buhler, 888	D 6
Bunker Hill, 200	D 5
Burden, 580	E 7
Burdett, 250	D 4
Burdick, 100	D 4
Burlingame, 1,151	D 8
Burlington, 2,113	D 8
Burns, 314	D 7
Burr Oak, 473	C 5
Burrton, 774	D 6
Bushong, 51	D 7
Bushong, 499	D 5
Byers, 82	E 5
Cadmus, 25	E 5
Cairo, 35	E 5
Caldwell, 1,788	E 6
Cambridge, 140	E 7
Cane, 2,682	E 8
Canton, 784	D 6
Carbondale, 664	D 8
Carlton, 78	D 6
Carneiro, 56	D 5
Carona, 175	E 9
Cassoday, 180	D 7
Catharine, 225	D 4
Caver City, 686	C 5
Cedar	C 5
Cedar Bluffs, 60	C 3
Cedar Point, 87	C 3
Cedar Vale, 859	E 7
Centerville, 250	D 8
Centralia, 527	C 7
Centropolis, 100	D 8

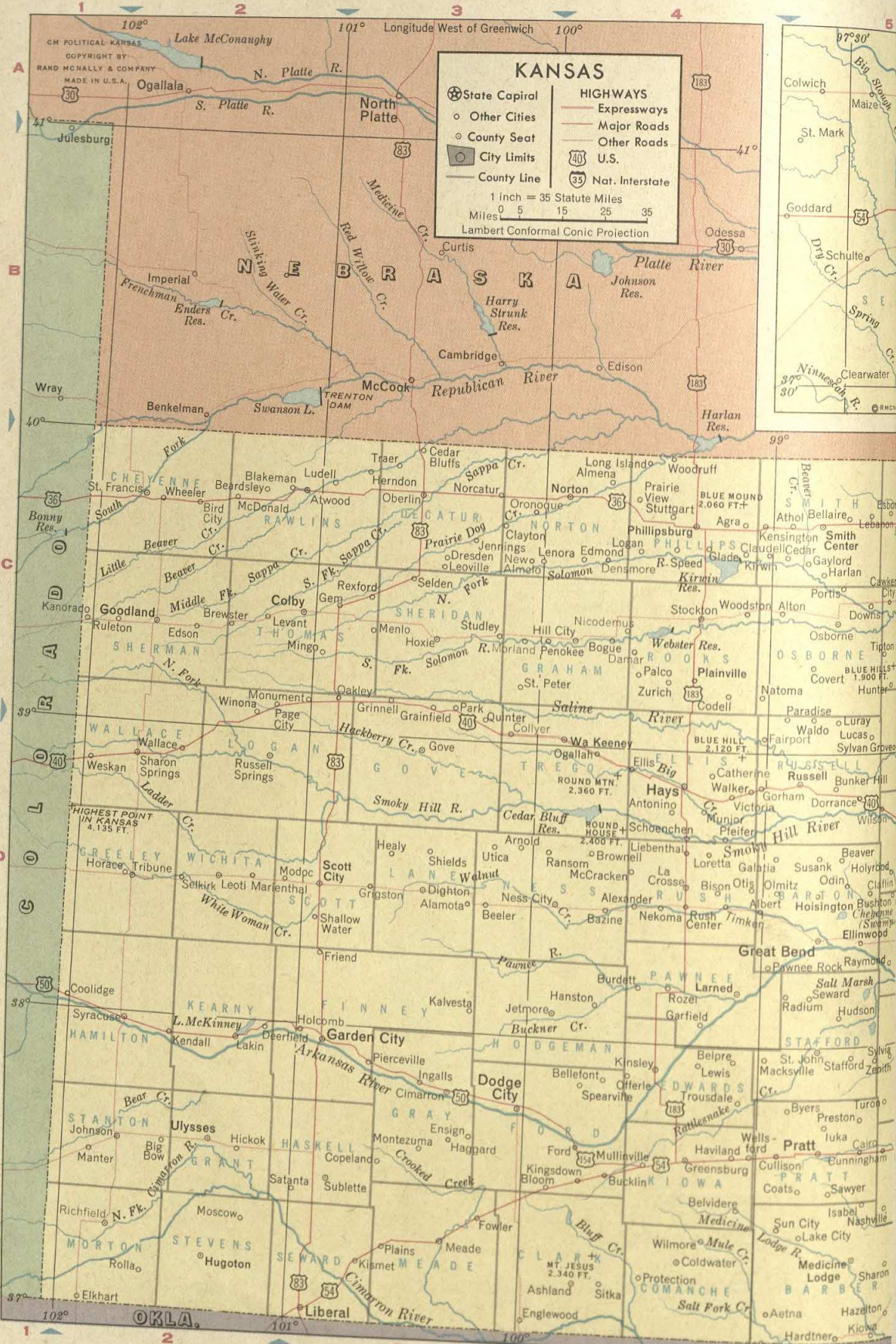
Chanute, 10,849	E 8
Chapman, 1,095	D 6
Chase, 922	D 5
Chautauqua, 205	E 7
Cheney, 1,101	E 9
Cherokee, 797	E 9
Cherryvale, 2,783	E 8
Chetopa, 1,538	E 8
Chicope, 200	E 9
Cimarron, 1,115	E 3
Circleville, 151	C 8
Claffin, 891	D 5
Clairton, 1,401	C 6
Clay Center	C 6
Clayton, 161	C 3
Clearfield, 50	D 8
Clearwater, 1,073	B 5, E 6
Cleburne, 150	C 7
Clements, 50	D 7
Clifton, 746	C 6
Climax, 81	E 7
Clopper, 50	B 5
Cloverdale, 850	E 5
Clyde, 1,025	C 6
Coats, 152	E 5
Cokerill, 35	E 9
Cody, 100	C 4
Coffeyville, 17,382	E 8
Cokan	C 8
Colby, 4,210	C 2
Coldwater, 1,164	E 4
Collier, 233	C 3
Colony, 419	D 8
Columbus, 3,395	E 9
Colwell, 703	A 5, E 6
Concordia, 7,022	C 6
Conway Springs, 1,057	E 6
Cooldige, 117	D 1
Copeland, 247	E 3
Corbin, 100	E 6
Corning, 240	C 7
Cottonwood Falls, 971	D 7
Council Grove, 2,664	D 7
Countryside, 428	D 9
Courtland, 384	C 6
Covert, 50	C 5
Covina, 133	E 8
Cuba, 336	E 4
Cullison, 129	C 6
Culver, 200	D 6
Cunningham, 618	E 5
Dalton, 35	E 6
Damar, 311	C 4
Danville, 118	E 6
Dearborn, 242	E 2
Deerfield, 40	E 8
Delavan, 200	D 7
Delia, 163	C 8
Delphos, 619	C 6
Denison, 184	C 8
Denmark, 50	C 5
Dennis, 150	E 8
Densmore, 65	C 4
Denton, 161	C 4
Derby, 6,458	B 6, E 6
De Soto, 1,271	D 9
Detroit, 100	D 6
Devon, 125	E 9
Dexter, 291	E 7
Dodge City, 1,526	D 3
Dodge City, 3,520	C 3
Doniphan, 150	E 8
Dorrance, 331	C 8
Douglas, 1,058	B 7, E 6
Dover, 150	D 8
Downs, 1,206	C 5
Dresden, 134	C 3
Drury, 45	E 6
Duluth, 60	C 7
Dunlap, 134	C 7
Durham, 183	D 7
Dwight, 281	D 7
Earlton, 104	E 8
Eastborough, 1,001	B 6
Easton, 320	C 8
Edgerton, 414	D 8
Edmond, 91	C 4
Edna, 442	C 2
Edson, 64	C 2
Edwardsville, 513	B 7
Elbing, 105	C 8
El Dorado, 12,523	E 7
Elgin, 148	E 7
Elk City, 498	E 7
Elk Falls, 198	E 8
Elkhart, 1,780	E 2
Ellinor, 28	D 7
Ellinwood, 2,729	D 5
Ellis, 218	D 4
Ellsworth, 2,361	D 5
Elm, 50	D 6
Elmont, 75	C 8
Elmore, 128	E 8
Elroy, 1,191	C 9
Elvira, 100	D 6
Empire, 128	B 7
Emporia, 18,190	D 5
Englewood, 243	E 4
Enosdale, 11	C 6
Ensign, 255	E 3
Enterprise, 1,015	D 6
Erie, 309	E 8
Esbon, 237	C 5
Eskridge, 519	D 7

Eudora, 1,526	D 8
Eureka, 4,055	E 7
Everest, 438	E 7
Fairdale, 200	C 8
Fairport, 30	C 4
Fairview, 272	C 8
Fairway, 5,398	B 8
Fall River	E 7
Fallun, 100	D 6
Farlington, 100	D 6
Farlington, 100	D 6
Farlington, 100	D 6
Farlington, 100	D 6
Florence, 853	D 7
Fontana, 188	D 9
Font, 252	E 4
Formosa, 192	C 6
Fort Dodge, 500	E 4
Fort Riley	E 7
Fort Scott, 9,410	E 7
Fostoria, 90	C 7
Fowler, 717	E 3
Fox Town, 25	E 9
Franklin, 1,106	C 6
Franklin, 620	D 5
Frederick, 48	D 5
Frederonia, 3,233	E 9
Freemont, 18	D 6
Freeport, 31	E 6
Friend, 50	D 3
Frontenac, 1,713	E 9
Fulton, 207	D 9
Galatia, 23	D 5
Galena, 3,827	E 8
Galesburg, 128	E 8
Galt, 100	D 5
Galva, 442	D 6
Garden City, 11,811	E 3
Garden Plain, 560	E 6
Garden, 129	D 9
Garfield, 279	D 9
Garland, 250	E 9
Garrett, 3,034	D 8
Gas, 312	E 8
Gaylord, 239	C 5
Gem, 116	C 3
Geneseo, 558	D 3
Geuda Springs, 223	E 9
Girard, 2,350	E 9
Glade, 133	C 4
Gladwin, 812	C 6
Glen Elder, 444	C 5
Glenfale, 25	D 6
Goddard, 533	B 5, E 6
Gossel, 327	B 7
Goff, 259	E 8
Goodland, 4,459	C 2
Goodrich, 35	D 9
Gordon, 100	B 7
Gorham, 429	D 4
Gove, 228	D 3
Grabham, 40	E 8
Grainfield, 389	C 3
Grantville, 20	E 8
Great Bend, 16,670	D 5
Greene, 415	D 5
Green, 190	C 7
Greenleaf, 562	C 7
Greensburg, 1,988	E 4
Greenwich, 55	A 6
Greenwich Heights, 350	E 7
Grenola, 349	E 6
Gridley, 321	D 8
Griston, 30	D 3
Grinnell, 396	C 3
Grinter Heights	B 7
Grove, 150	C 8
Gypsum, 593	E 6
Hackney, 35	E 6
Haddam, 311	C 6
Haggard, 35	E 3
Half Mound, 30	C 8
Hallowell, 225	E 8
Halls Summit, 40	E 8
Hartford, 1,183	E 8
Hamilton, 100	E 7
Hamlin, 99	C 8
Hammond, 50	E 9
Hanover, 773	C 7
Hanston, 279	D 9
Harding, 50	E 5
Hartford, 372	E 5
Harlan, 125	C 5
Harper, 1,899	E 5
Harris, 36	D 8
Hartford, 337	D 8
Harveyville, 204	E 8
Havana, 162	E 6
Haven, 982	C 7
Havensville, 168	C 7
Haviland, 725	E 4
Hays, 11,947	D 4
Haysville, 5,836	B 5
Hazelton, 246	E 3
Healy, 228	E 9
Hepler, 178	D 7
Herrington, 3,702	C 7
Herkimer, 110	E 8
Herndon, 339	C 3
Hesston, 1,103	D 6
Hewins, 110	E 9
Hiattville, 125	E 8
Hiawatha, 3,391	E 2
Hickok, 45	E 8
Hicrest (Highland Park) (part of Topeka)	C 8
Highland, 755	C 8
Hill City, 2,421	C 4
Hillsboro, 2,441	D 9
Hillsdale, 142	D 4
Hodgeman	D 4

*County Seat.

*Does not appear on the map; key shows general location.

Source: Latest available census figures.



KANSAS

State Capital

Other Cities

County Seat

City Limits

County Line

HIGHWAYS

Expressways

Major Roads

Other Roads

U.S.

Nat. Interstate

1 inch = 35 Statute Miles

Miles 0 5 15 25 35

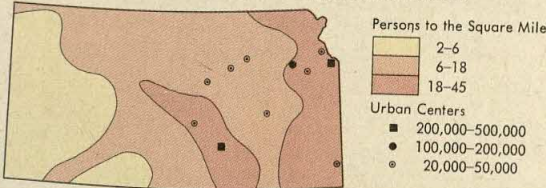
Lambert Conformal Conic Projection

KANSAS

The maps and graphs on this page show the variations in rainfall, population, and growing season. They also tell the chief ways the people earn their living and the average yearly value of the state's main products.

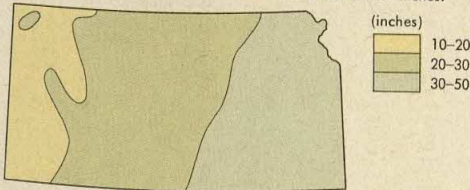
POPULATION

Most of the people of Kansas live in the eastern and central parts of the state.



AVERAGE YEARLY RAINFALL

Yearly rainfall in the western part of Kansas is less than 20 inches.

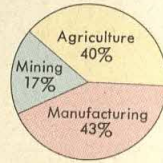


GROWING SEASON

The southern sections of Kansas have a growing season of over 200 days.



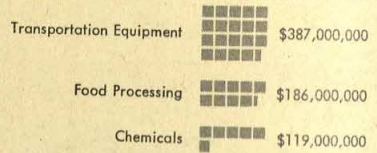
TOTAL PRODUCTION \$2,537,000,000



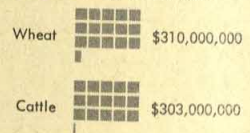
KANSAS' LEADING PRODUCTS

Each Box ■ Represents \$20,000,000 Worth of Products.

MANUFACTURING Total Value Added \$1,077,000,000



AGRICULTURE Total \$1,026,000,000



MINING Total \$434,000,000



All figures are based on government statistics for a 4 year period.

ECONOMIC ACTIVITY

Petroleum and natural gas account for 84 per cent of the state's mining income.

MANUFACTURING

- Food Processing
- Metal Products
- Printing & Publishing
- Rubber & Products
- Stone, Clay & Glass Products
- Transportation Equipment

MINING

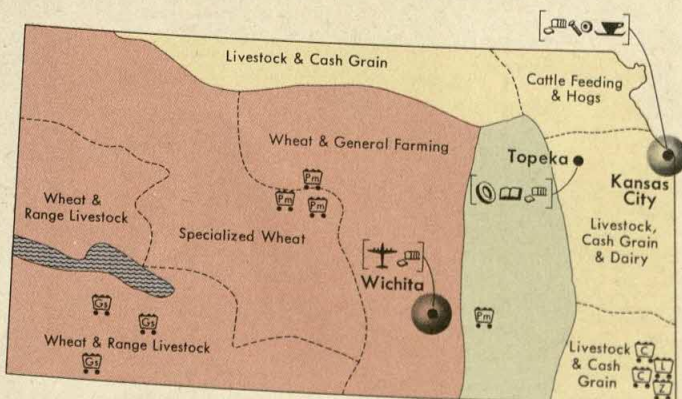
- Coal
- Natural Gas
- Lead
- Petroleum
- Zinc

AGRICULTURE

- Feed Grains & Livestock
- Wheat & Small Grains
- Special Crops & General Farming
- Seasonal Grazing
- Irrigated Land

KANSAS' CHIEF MANUFACTURING CENTERS

● \$100,000,000 to \$500,000,000



(Map Index) KANSAS

Source: Latest available census figures.

KANSAS

tral and western areas, especially in Smith County. Other mineral products include shale, asphalt rock, helium, and clay. A government-owned plant at Otis produces about 50,000,000 cubic feet of helium a year. Helium was first discovered in natural gas in 1905 by Hamilton P. Cady and David F. McFarland of the University of Kansas. Deposits of clay suitable for making pottery, tile, brick, and firebrick are mined in several central counties.

Manufacturing and Processing. The manufacture of transportation equipment ranks as the most valuable industrial activity. About 33 per cent of the state's manufacturing income comes from this industry. The country's small-plane industry is centered at Wichita, where the two largest companies, Cessna Aircraft and Beech Aircraft, have plants. The Boeing Airplane Company at Wichita builds large jet bombers and other aircraft. Freight cars, passenger cars, and parts for locomotives and railroad cars are manufactured in Topeka. Workmen in plants in Kansas City rebuild and repair railroad cars. Factories in Wichita, Atchison, Parsons, and Coffeyville also manufacture railroad equipment.

The state's second most valuable industrial activity is food processing. Fruits and vegetables are canned in factories throughout eastern Kansas. Meat packing and poultry dressing are important industries in Kansas City, Topeka, and Wichita. Soap, a by-product of the meat-packing industry, is manufactured in Kansas City. About a sixth of the bread baked in the United States contains flour made in Kansas. The largest flour mills and grist mills operate at Salina, Topeka, Wichita, Atchison, Hutchinson, and Kansas City. Plants at Hutchinson and Lawrence process wheat straw into strawboard, a type of paperboard used for making boxes. The grinding of feeds for livestock and poultry is another important industry. Plants in most of the cities make butter, cheese, ice cream, and condensed milk. Linseed oil and meal from flaxseed come from plants at Fredonia.

Petroleum refining ranks as the leading industry in several southeastern communities. The cement industry has become important because of abundant deposits of limestone, shale, and other raw materials. Cities with cement plants include Bonner Springs, Iola, Humboldt, Chanute, Fredonia, Independence, and Fort Scott. Rock wool, an insulating material, is manufactured at Winfield and near Neodesha. Other large industries include the manufacture of oil-field and coal-mining machinery, the smelting and refining of zinc, the manufacturing of chemicals, and the processing and manufacturing of salt, brick, tile, and pottery.

Electric Power in Kansas is generated almost entirely by gas, oil, and coal. Only six of the state's more than 1,300 generating plants use water power. Kansas has few streams capable of producing hydroelectric power. For Kansas' kilowatt-hour production, see **ELECTRIC POWER** (table).

Transportation. Since the days of the Westward Movement, Kansas has been important in transcontinental travel because of its central location. In the mid-1800's, wagon trains crossed northeastern Kansas along the Big Blue River to join the Oregon Trail in Nebraska. The Santa Fe Trail led southwestward for 400

miles across the state. See **WESTWARD MOVEMENT**.

Aviation. Seven major airlines serve Kansas. The state has more than 200 airports, about 80 of which are publicly owned. The largest public airports are at Wichita and Topeka.

Railroads. Sixteen railroad lines operate more than 8,000 miles of railroad track in Kansas. Nearly a third of the track is owned by the Atchison, Topeka & Santa Fe Railroad. The state's first railroad was a 5-mile line built in 1859 from Elwood to Wathena.

Roads and Highways. Kansas has more than 133,000 miles of roads and highways, about half of which are surfaced. The 236-mile Kansas Turnpike, a four-lane toll highway, cuts across the state from Kansas City to the Oklahoma border south of Wichita.

Communication. Kansans publish more than 350 newspapers, including about 50 dailies and 300 weeklies. More than 100 magazines and pamphlets are published. Jotham Meeker, a Baptist missionary, established the state's first newspaper, the *Shawnee Sun*, in 1835. Meeker printed the paper in the language of the Shawnee tribe, and published it monthly near present-day Kansas City. The *Kansas Weekly Herald*, the state's first English-language newspaper, appeared in 1854 at Leavenworth.

Several Kansas editors have gained national fame. William Allen White, "The Sage of Emporia," was owner and editor of the *Emporia Gazette*. White won the Pulitzer prize for editorial writing in 1923. He also wrote several books. Edgar W. Howe, "The Sage of Potato Hill," was editor and publisher of the *Atchison Globe* from 1877 to 1911. He also wrote about 25 books. Arthur Capper, publisher of the *Topeka Daily Capital*, became important in state and national politics. He established *Capper's Weekly* in 1879, *Capper's Farmer* in 1889, and *Household Magazine* in 1900.

Kansas' first radio station, KFJH, was established in 1922 at Wichita. The first television station, experimental station WQKAK, was founded in 1932 at Kansas State College in Manhattan. The state's first commercial television station, KTVH, began operating at Hutchinson in 1953.

Education

Schools. The first schools in Kansas were established for the Indians by early missionaries. Children of early white settlers also attended these schools. The first territorial legislature adopted laws in 1855 for the free education of white children. The state constitution, adopted in 1859, provided for equal education for all. The Haskell Institute, founded at Lawrence in 1884, is the largest Indian school in the country.

Schools received little financial aid from the state until 1937. In that year, the legislature provided that funds from tax revenues be distributed annually by the state superintendent of public instruction. State law requires children between the ages of 7 and 16 to attend school. For the number of students and teachers in Kansas, see **EDUCATION** (table).

Libraries. The state has more than 280 public libraries. Bookmobiles serve farm areas. The University of Kansas Library at Lawrence is the largest in the state. Other large libraries include the Kansas State Library and the Kansas State Historical Society Library, both at Topeka, and Farrell Library at Kansas State College

in Manhattan. The State Historical Society, founded in 1875, has the country's largest collection of American newspapers after the Library of Congress. It includes about 64,000 volumes and 3,000 reels of microfilm.

Museums. The Museum of Natural History at the University of Kansas owns extensive research collections on archaeology. It also has a 550-foot-long panorama of North American animals that shows them in their natural surroundings. One of the museum's most popular exhibits is Comanche, a horse that was the only survivor of Custer's last stand. The Museum of Art at the University of Kansas has large collections of European and American paintings and sculptures. The university's Snow Entomological Museum has more than a million insects. The Museum of the State Historical Society in Topeka has large collections of minerals, sea shells, stuffed birds, and other items.

The Eisenhower Foundation Museum at Abilene stands next to Dwight D. Eisenhower's childhood home. It has more than 6,000 items, including many of the President's military medals, trophies, and personal papers. The Eisenhower home has its original furnishings. Other museums include the Mulvane Art Museum at Washburn University in Topeka and the Municipal Art Museum in Wichita.

The Arts

Painting. Kansas' best-known artists include John Noble, a seascape painter, and George Melville Stone, a painter of murals. Birger Sandzen is noted for his paintings of Southwestern scenery. John Steuart Curry gained recognition for his paintings of Midwestern life.

Literature. Kansas newspapermen have written several notable books. Edgar W. Howe of Atchison de-

scribed Kansas life in *Story of a Country Town*, *Plain People*, and *Final Conclusions*. William Allen White of Emporia wrote many books, including *A Puritan in Babylon* and *The Changing West*. White's son, William Lindsay White, also won recognition as an author and as a war correspondent. See WHITE (family).

Charles M. Sheldon, a Topeka minister, wrote about 30 novels. His first book, *In His Steps*, published in 1896, is an imaginative account of how Christ might react to life in a small Midwestern city. Dramatist William Inge gained fame for his plays *Come Back Little Sheba*, *Bus Stop*, and *The Dark at the Top of the Stairs*. In 1953, he won a Pulitzer prize for *Picnic* (see INGE, WILLIAM).

Interesting Places to Visit

Many historic places remind visitors of pioneer days when Kansas was the scene of bloody battles and famous cattle drives, and the home of cowboys, homesteaders, Indians, and cattle barons. But the most unforgettable sight is a view of thousands of acres of rippling golden wheat waiting to be harvested.

Following are brief descriptions of some of the most interesting places to visit.

Chalk Beds, in Gove and Trego counties, have yielded many fossil remains since their discovery in the 1860's. Many fossils have been removed and placed in museums.

Fort Leavenworth, an important U.S. Army post, stands near Leavenworth. Established in 1827, it was the first U.S. Regular Army post in the Kansas territory. Leavenworth Prison, one of six U.S. penitentiaries, is on the grounds. See LEAVENWORTH; LEAVENWORTH PRISON.

Fort Riley, near Junction City, is the home of the U.S. Army General School and an Officers' Candidate School. Fort Riley was established in 1852. General George A. Custer made his headquarters here during the late 1860's. The first territorial Capitol, built in 1855 at nearby Pawnee, has been restored on its original site.

Hollenberg Station, at Hanover, is the only Pony Express station remaining in an unaltered condition of the 190 in the West during the early 1860's. It was one of the first stops on the route from St. Joseph, Mo., to Sacramento, Calif.

Indian Burial Pit, near Salina, is a prehistoric burial place protected by a building constructed over the pit. More than 100 skeletons have been uncovered. The pit contains Indian relics, including necklaces of clamshell beads and pottery.

Lecompton, a territorial capital, lies northwest of Lawrence. Historic buildings in the town include the Rowena Hotel and Constitution Hall. The Lecompton constitution was written in Constitution Hall.

Natural Bridge, near Sun City, spans a stream 12 feet above the water. This bridge of gypsum rock, about 35 feet wide and 50 feet across, has a footpath.

State Forest and Parks. Kansas has one state forest, Kingman, which covers 1,600 acres in south-central Kingman County. The 25 state parks cover about 32,000 acres. Many have lakes created by dams. The following list includes the most important parks.

Clark County State Park (1,289 acres), near Ashland, has unusual scenic beauty, with rugged canyons more than 150 feet deep. A dam creates a 337-acre lake that offers boating and fishing. Established in 1934.

John Brown Memorial State Park (24 acres), at Osawatimie, is dedicated to the antislavery leader who came to Osawatimie in 1855. The park was the site of

UNIVERSITIES AND COLLEGES

The following accredited universities and colleges in Kansas have separate articles in THE WORLD BOOK ENCYCLOPEDIA. For enrollment, see UNIVERSITIES AND COLLEGES (table). Kansas has 21 accredited four-year colleges and universities, 5 that are nonaccredited, and 19 junior colleges.

NAME	LOCATION	FOUNDED
Baker University	Baldwin City	1858
Bethany College	Lindsborg	1881
Bethel College	North Newton	1887
Emporia, College of	Emporia	1882
Fort Hays Kansas State College	Hays	1901
Friends University	Wichita	1898
Kansas, University of	Lawrence	1864
Kansas State		
College of Pittsburg	Pittsburg	1903
Kansas State Teachers College	Emporia	1863
Kansas State University of		
Agriculture and Applied Science	Manhattan	1863
Kansas Wesleyan University	Salina	1886
Marymount College	Salina	1922
McPherson College	McPherson	1887
Mount St. Scholastica College	Atchison	1863
Ottawa University	Ottawa	1865
St. Benedict's College	Atchison	1858
Saint Mary College	Xavier	1860
Southwestern College	Winfield	1885
Sterling College	Sterling	1887
Washburn University of Topeka	Topeka	1865
Wichita, University of	Wichita	1895



Shostal

Kansas Industrial Dev. Comm.



The Nation's Largest Wheat Crop is grown by Kansas farmers. Several combines may harvest one field of grain, *above*. The wheat is then stored in large elevators like the one at Junction City, *left*.

70 Per Cent of the Country's Light Planes are built at Wichita. The nation's two largest small-aircraft companies, Cessna and Beech, are located here.



Monument Rocks, in western Gove County, look like lofty spires and castles. Some of these chalk cliffs rise more than 75 feet above the prairie. They were carved by centuries-long action of wind and rain.



R. R. Leahey, Shostal; Kansas Industrial Dev. Comm.



Madonna of the Trail
statue at Council Grove honors
the hardy spirit of the pioneer
women who settled Kansas.

Grace Mullenburg, State Geological Survey, University of Kansas



Dutch Windmills, such as
this one in Wamego, were built
throughout the state in the late
1800's to pump water for crops.

Missouri and Kansas Rivers Join to form the dividing line between Kansas
City, Kan., foreground, and Kansas City, Mo., background. Kansas City, Kan.,
is a great railroad, meat-packing, wheat storage, and flour-milling center.

George Hunter, Shostal



KANSAS

the battle in 1856 between Brown's Free Staters and a group of proslavery men. The log cabin where Brown stayed still stands. President Theodore Roosevelt dedicated the park in 1910.

Pawnee Rock State Park (5 acres), near Pawnee Rock, has a famed landmark of the Santa Fe Trail. Indians and white settlers used Pawnee Rock as a lookout point. Established in 1908.

Scott County State Park (1,280 acres), near Scott City, is one of the most scenic spots in the state. It includes a buffalo refuge and the ruins of El Cuartelejo, an Indian pueblo built in the 1600's. Established in 1926.

Annual Events in Kansas

The State Fair at Hutchinson and the Mid America Fair Association at Topeka are among the most popular annual events. Kansans come hundreds of miles to attend these week-long fairs in mid-September.

Other annual events include the following.

January, Kansas Day, state-wide, Jan. 29; Farm and Home Week at Manhattan, no fixed date.

March, St. David's Day Celebration at Emporia, Mar. 1; State High School Basketball Tournament at Topeka, third week; Holy City Sacred Cantata at Fort Scott, last Sunday; Girls' National Basketball Tournament at Wichita, no fixed date.

April, Music Week at Kansas City, first week after Easter; Kansas Relays at Lawrence, third week; Music Festival at Lindsborg, no fixed date.

May, Mexican Fiesta at Kansas City, May 5; Music Week at Lawrence, no fixed date; Mennonite Music Festival at Newton, no fixed date.

July, Mexican Fiesta at Topeka, no fixed date; Corn Dance at the Kickapoo Reservation, no fixed date.

August, Southeastern Kansas Exposition at Iola, fourth week; Days of Forty-Nine Festival, Hanover, fourth week.

September, Montgomery County Fair at Coffeyville, first week; Tri-County Fair at Horton, first week; Great Southwest Free Fair at Dodge City, third week.

October, Arkalalah at Arkansas City, Oct. 31; Neewollah at Independence, Oct. 31; American Royal Live Stock and Horse Show at Kansas City, fourth week.

November, Kansas State High School Band Contest at Manhattan, no fixed date; Stock Show at Wichita, no fixed date.

Government

Constitution. Kansas is governed under a constitution adopted in 1859, two years before it became a state. Amendments to the constitution must be approved by a two-thirds vote of all the legislators, and by a majority of the voters in a general election. The state has been among the first to adopt many laws and policies. For example, the first "blue-sky law" in the country was enacted by the Kansas legislature in 1911. This kind of law, designed to protect investors, regulates the issue and sale of stocks, bonds, and other securities (see BLUE-SKY LAWS).

Executive officers include the governor, lieutenant governor, secretary of state, attorney general, auditor, treasurer, superintendent of public instruction, commissioner of insurance, and state printer. All are elected to two-year terms, and may seek re-election. The governor appoints state boards and commissions.

Legislature includes a senate and a house of representatives. Kansas has 40 senatorial districts, with one senator from each, and 125 legislative districts, with one representative from each. The senatorial and legis-

lative districts are determined by population, but each county has at least one representative. Senators serve four-year terms, and representatives serve two-year terms. The legislature meets in regular sessions beginning in January of odd-numbered years, and in budget sessions in January of even-numbered years.

In 1933, Kansas established a legislative council, the first such body in the country. The council meets four times a year to discuss matters scheduled for legislative action. It looks into the legislative needs of the state, prepares and recommends bills, and employs experts for special studies. It consists of 10 senators appointed by the lieutenant governor, and 15 representatives appointed by the speaker of the house.

Courts. The state supreme court has seven justices, all elected for six-year terms. They are chosen at general elections in different years. The justice with the shortest remaining term serves as chief justice. Kansas also has 38 district courts, and each county has a probate court.

Local Government. The people of each county elect a board of commissioners. Townships, or subdivisions of counties, also have elected officials. Most of the incorporated cities have mayor-council governments.

Taxation. The state government receives most of its income from general sales taxes. The state also taxes property and motor vehicles. Both individuals and corporations pay state income taxes.

Politics. In 1864, Kansans voted in a presidential election for the first time. The vote was overwhelmingly Republican, as it has been in most presidential elections since then. For the voting record in presidential elections since 1864, see ELECTORAL COLLEGE (table).

Kansas is also strongly Republican on the level of state and local politics. Since statehood, Kansas has had only five Democratic governors. The state legislature is usually Republican, as are most county and local officials.

National Defense. The state's most important air force bases include Forbes Air Force Base at Topeka, McConnell Air Force Base at Wichita, and Schilling Air Force Base near Salina. The several army installations include Fort Leavenworth near Leavenworth, and Fort Riley near Junction City.

History

Indian Days. Eight Indian tribes probably lived in the Kansas region before the coming of the white men. They included the Kansa, Osage, and Pawnee. These tribes lived in small villages, hunted buffalo on the plains, and raised corn, beans, and squash. When the Spaniards brought horses to the region in the 1600's, more Indians moved into the Kansas lands to hunt buffalo on horseback. See INDIAN, AMERICAN (Plains Indians; table, Indian Tribes).

Exploration. Spanish explorers led by Francisco Vásquez de Coronado came to the region in 1541. Coronado and his men hoped to find gold in their search for the mythical land of Quivira. Their expedition probably reached a point near present-day Lindsborg. But Coronado found no riches, and returned to Mexico City. Other Spanish explorers also failed to establish permanent settlements.

In 1719, French adventurers claimed the region for France. But they came only to trade with the Indians for furs. Etienne Venyard, Sieur de Bourgmont, a

French explorer, built Fort Orleans near the mouth of the Osage River in 1724. Kansas warriors destroyed the settlement the next year. In 1762, France ceded the Louisiana Territory, which included Kansas, to Spain. The Treaty of Madrid of 1800 gave the Louisiana land west of the Mississippi River back to France. The United States acquired most of Kansas as part of the Louisiana Purchase in 1803. The southwestern corner of the state was obtained as a grant from Texas in 1850.

Territorial Days. In 1812, Congress admitted Louisiana into the Union. That same year, Congress formed the Territory of Missouri. It included all the area of the Louisiana Purchase that did not form the state of Louisiana. Kansas remained a part of the Missouri Territory until 1821, when Missouri became a state (see MISSOURI COMPROMISE). In 1825, the federal government decided to make Kansas an Indian territory. Between 1825 and 1842, nearly 30 tribes gave up their lands east of the Mississippi River and settled on small reservations in Kansas. The largest of these groups included the Shawnee, Delaware, Potawatomi, Chippewa, Munsee, Iowa, Sauk, Fox, Wyandotte, and Kickapoo.

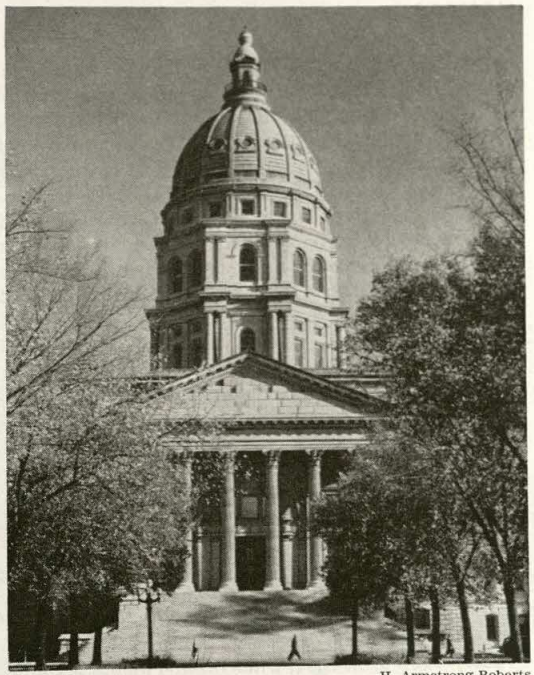
Settlement. In 1827, Colonel Henry Leavenworth established Kansas' first permanent white settlement, now Fort Leavenworth. When the rush of settlers to California and Utah began in the 1840's, Kansas lay on the westward route. An almost endless train of great canvas-covered wagons, or prairie schooners, crossed the territory on the Santa Fe, Cherokee, and California trails. Some of the pioneers realized that much of the Kansas region showed agricultural promise, and settled there instead of continuing westward.

The Treaty of Fort Laramie in 1851 gave a large tract of land in western Kansas to the Arapaho and Cheyenne. The federal government also promised to protect these Indian lands against white trespassers. But the discovery of gold in Colorado in 1858 brought a flood of gold seekers across the reservations. The angered Indians began a series of raids and uprisings that lasted until 1878. The Kiowa and Comanche, farther west, joined in the warfare. The four tribes were given reservations in Indian Territory (present-day Oklahoma) in 1867. But they refused to accept these lands until after the treaties of 1874-1875 (see INDIAN TERRITORY).

In 1852, settlers began to appeal to Congress to organize Kansas as a territory. On May 30, 1854, President Franklin Pierce signed the Kansas-Nebraska Act. This act created the Territory of Kansas, which included part of Colorado and was much larger than the present state.

"Bleeding Kansas." The Kansas-Nebraska Act repealed the Missouri Compromise, and provided that the region's settlers would determine whether Kansas should become a slaveholding state or a free state. Proslavery and antislavery forces fought fierce and bitter battles, and the territory soon became known as "Bleeding Kansas." Each group hoped to gain enough settlers to decide the slavery question in its favor. Shortly after the territory opened in 1854, thousands of immigrants began to arrive from Illinois, Indiana, Kentucky, Missouri, and Ohio. Immigrants also came from the South and from New England. President Pierce appointed Andrew H. Reeder of Pennsylvania as the first territorial governor of Kansas.

Settlers from slaveholding Missouri moved into Kan-



H. Armstrong Roberts

State Capitol in Topeka, begun in 1866 and completed in 1903, has four wings extending from a domed central rotunda.

sas in such large numbers that the first elections in 1855 resulted in victory for the slavery forces. Free Staters charged that the elections were dishonest. They claimed more votes had been cast than there were people. The Free Staters called a convention to meet at Topeka in October, 1855. They set up a rival government and drafted a constitution. But the United States refused to recognize their government. The struggle for control of the territory raged on. In 1856, proslavery men attacked the town of Lawrence, which was known to favor a free state. They destroyed the newspaper office, burned many buildings, and killed several Free State men. Then John Brown, a rabid abolitionist, led a raid on a small settlement on Pottawatomie Creek. Brown's band killed five proslavery men. For months the territory went through the horrors of war.

Federal troops, called by Governor John W. Geary late in 1856, helped ease the tension. During the next three years, the Free State party gained much power. The proslavery party adopted a constitution at Leecompton, but the people rejected it in 1858. Finally, in 1859, the people approved a constitution prohibiting slavery. The territory had a population of 107,206 in 1860.

Statehood. On Jan. 29, 1861, Congress admitted Kansas to the Union as the 34th state. The next month, Charles L. Robinson, a Republican, became the state's first governor. During the Civil War, Kansas sent more soldiers into the Union Army, in proportion to its population, than any other state. Although Kansas was not in the battle zone, Confederates waged guerrilla warfare along the eastern border and added to the hardships brought on earlier by a drought. In 1863, William Clark Quantrill and his Confederate guerrillas raided and destroyed much of Lawrence, killing more than 150

KANSAS

persons (see QUANTRILL, WILLIAM CLARKE), Kansas developed rapidly after the war. By 1868, thousands of settlers were coming into the state on the new railroads.

South of Kansas lay the great cattle-raising region of Texas. Cowboys drove herds of cattle along the "Long Trail" from Texas to the newly built railroads in Kansas. Abilene, Wichita, Dodge City, and Caldwell boomed as "cow towns." The railroads carried the longhorn cattle to eastern markets. The cattle drives ended when the railroads reached Texas in the 1880's. More and more farmers moved into Kansas and built fences around their land.

By 1880, Kansas had a population of 996,096. But the water shortage caused serious problems for farmers. Some built Dutch windmills in towns and on farms to pump water. In 1890, Kansas' population reached 1,428,108, and before 1900 most of the state had been settled. In the early 1890's, near Neodesha, drillers brought in Kansas' first commercial oil well. The famous Mid-Continent oil field soon developed around this first well.

Kansas approved state-wide prohibition in 1880, but many saloons continued to operate. Carry Nation raided many of them in the 1890's. See NATION, CARRY A.M.

Early 1900's. In 1903, while drilling for gas in southeastern Kansas, drillers discovered the country's first helium supply at Dexter. With oil and gas fields already producing in the southern part of the state, Kansas' mining industry became even more important. In 1912, Kansas became one of the first states to give women the right to vote in all elections.

During World War I, the state's agricultural output increased greatly to meet wartime needs. More than 80,000 Kansans served in the armed forces, and factories contributed to the war effort.

During the 1920's, Kansas farms produced large

RED-LETTER DATES IN KANSAS

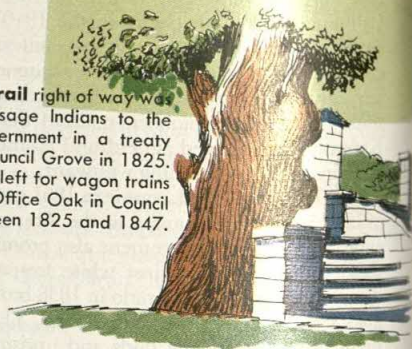
- 1541 The Spanish explorer Coronado entered Kansas.
- 1724 Etienne Venyard, Sieur de Bourgmont, a French explorer, crossed the region from east to west.
- 1803 Kansas became United States territory as a part of the Louisiana Purchase.
- 1804 The Lewis and Clark Expedition traveled south of the Kansas River.
- 1822 Captain William Becknell established the route of the Santa Fe Trail.
- 1827 Colonel Henry Leavenworth built Fort Leavenworth.
- 1850's and 1860's Armed clashes between antislavery and proslavery forces gave the region the nickname of "Bleeding Kansas."
- 1854 Congress established the Territory of Kansas.
- 1861 Kansas became the 34th state on January 29.
- 1873-1874 Mennonite immigrants from Russia planted and raised the first Turkey Red, a variety of hard winter wheat, in Kansas.
- 1881 Railroads reached Texas, ending the famous cattle drives to Kansas "cow towns."
- 1894 Kansas oil and gas fields began producing.
- 1903 The country's first helium was discovered at Dexter.
- 1912 Kansas gave women the right to vote.
- 1934-35 Dust storms ruined much Kansas farm land.
- 1951-56 Severe droughts caused the driest five-year period in the state's history.
- 1956 The 236-mile Kansas Turnpike opened to traffic.

First White Man to explore Kansas was the Spaniard Coronado. His expedition entered the region in 1541 in search of gold.



Dwight D. Eisenhower's boyhood home is preserved at Abilene. The Eisenhower Foundation Museum stands beside it. Dodge City

Santa Fe Trail right of way was given by Osage Indians to the federal government in a treaty signed at Council Grove in 1825. Letters were left for wagon trains at the Post Office Oak in Council Grove between 1825 and 1847.



crops, and its manufacturing activities continued to develop.

The 1930's and 1940's. The depression of the 1930's caused great hardships for Kansans. Crop prices dropped severely, and farmers could not market their produce. Most towns depended on selling to farmers, so the townspeople also suffered great losses. Harry H. Woodring, of Neodesha, became Kansas' third Democratic governor. He served during the worst depression years.

In 1932, Kansans elected Alfred M. Landon, a Republican from Independence, as governor. He soon gained national attention by balancing the state budget while most other states went into debt. The Republican party nominated Landon for the presidency in 1936. But Franklin D. Roosevelt defeated him, winning all states except Vermont and Maine. Dust storms during the middle 1930's caused further hardships to farmers, but started the state on a soil-conservation and lake-building program.

Mining and manufacturing developed greatly during World War II. Large military-equipment plants opened in Kansas City, Wichita, Topeka, Lawrence, Parsons, Pittsburg, and other cities. Large military bases were built near Hutchinson, Olathe, Topeka, Wichita, and elsewhere in the state. About 225,000 Kansans served

First Permanent White Settlement in Kansas was established by Capt. Henry Leavenworth at present-day Fort Leavenworth in 1827 to protect wagon trains using the Santa Fe Trail.

HISTORIC KANSAS



"Bleeding Kansas." John Brown, an abolitionist, led a raid on southern sympathizers in a small settlement on Pottawatomie Creek in May, 1856. This raid focused the country's attention on the border warfare between Free Staters and proslavery men in the territory.

Only Remaining Pony Express Station of the 190 built in the West during the 1860's is the Hollenberg Station at Hanover. It was one of the first stops after St. Joseph, Mo.



Heart of the Wheat Belt. Mennonites from Russia settled in four central Kansas counties in the 1870's. They planted a new variety of winter wheat, called Turkey Red, that helped make Kansas the leading wheat state.



Famous "Cow Towns." Texas longhorns were first brought to such Kansas railroad centers as Abilene, Wichita, and Dodge City in the late 1860's, along the Chisholm and other trails.

in the armed forces during the war.

Recent Developments. Between 1947 and 1957, Kansas had three Republican governors. Frank Carlson of Concordia was governor from 1947 to 1951, Edward F. Arn of Wichita from 1951 to 1955, and Fred Hall of Dodge City from 1955 to 1957. Dwight D. Eisenhower, who grew up in Abilene, was elected the 34th President of the United States in 1952, and won re-election in 1956. Severe droughts from 1953 through 1955 ruined much of the state's crop production, and led to the establishment in 1955 of a water resources board. During the 1950's, the federal government stored vast amounts of surplus commodities and critical war materials in large limestone caves near Atchison. In 1956, the 236-mile Kansas Turnpike opened. Kansas elected a Democratic governor, George Docking, in 1956, and in 1958 he became the first Democrat to be re-elected. A Republican, John Anderson, Jr., was elected governor in 1960.

Famous Kansans

Separate biographies are listed under the heading Kansas in the BIOGRAPHY section of the READING AND STUDY GUIDE. A statue of John J. Ingalls, lawyer and statesman, represents Kansas in Statuary Hall in the Capitol in Washington, D.C. The following short

biographies include other noted persons who were born in Kansas or did important work there.

Bickerdyke, Mary Ann Ball (1817-1901), one of the most beloved army nurses in the Civil War, became known as "Mother Bickerdyke." After the war, she started a movement to help veterans move to the West. She was born in Knox County, Ohio.

Clark, Georgia Neese (1900-), became the first woman Treasurer of the United States. President Harry S. Truman appointed Mrs. Clark, a Democrat, to the office in 1949, and she served until 1953. Mrs. Clark was a banker, businesswoman, and farm owner in Richland, her birthplace.

Lane, James Henry (1814-1866), a Democratic politician who became a Republican, was an outstanding leader of the antislavery movement in the Kansas Territory. He helped organize the Free State party in Kansas in 1855, and led the convention that wrote the Free State constitution at Topeka. Lane served in the U.S. Army as a colonel during the Mexican war, and was Kansas' first U.S. Senator.

Reeder, Andrew Horatio (1807-1864), a Democrat, served as the first territorial governor. President Franklin Pierce, who had appointed him, removed Reeder from office in 1855 because of voting frauds. Reeder later

KANSAS

served as a Free State delegate to Congress. He was born in Easton, Pa.

Salter, Susanna Medora (1860-), was the first woman mayor in the United States. The people of Argonia elected her on the Republican ticket in 1887, and she held office for one year. Mrs. Salter was born in Lamira, Ohio.

Schoeppel, Andrew F. (1894-), a Republican, served as governor from 1943 to 1947. He received wide attention for signing a labor-control bill requiring union agents to be licensed and barring sit-down strikes. Schoeppel became a U.S. Senator in 1948, and was re-elected in 1954 and 1960. He was born in Clafflin.

WILLIAM F. ZORNOW. Critically reviewed by JOHN H. STICHER

Related Articles in WORLD BOOK include:

BIOGRAPHIES

An alphabetical list of biographies relating to Kansas appears under the heading Kansas in the BIOGRAPHY section of the READING AND STUDY GUIDE.

CITIES

Abilene	Dodge City	Leavenworth	Wichita
Atchison	Hutchinson	Salina	
Council Grove	Kansas City	Topeka	

HISTORY

Brown, John	Lewis and Clark Expedition
Buchanan, James (The Struggle Over Slavery)	Louisiana Purchase
Coronado, Francisco V.	Pioneer Life
Indian, American	Quantrill, William C.
Jefferson Territory	Trails of Early Days
Kansa Indians	Western Frontier Life
Kansas-Nebraska Act	Westward Movement

PHYSICAL FEATURES

Arkansas River	Missouri River
Dust Bowl	Plain

PRODUCTS

For Kansas' rank among the states in production, see the following articles:

Cattle	Limestone	Petroleum	Wheat
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UNIVERSITIES AND COLLEGES

Kansas universities and colleges which have separate articles are listed in a table in the *Education* section of this article.

UNCLASSIFIED

Chalk	Geodetic Center	Midwestern
Fort Leavenworth	of North America	States
Fort Riley	Jayhawk	

Outline

- I. The Land and Its Resources
 - A. Location and Size
 - B. Land Regions
 - C. Rivers and Lakes
 - D. Natural Resources
 - E. Climate
- II. Life of the People
 - A. The People
 - B. Cities
 - C. Country Life
- III. Work of the People
 - A. Agriculture
 - B. Mining
 - C. Manufacturing and Processing
 - D. Electric Power
 - E. Transportation
 - F. Communication
- IV. Education
- V. The Arts
- VI. Interesting Places to Visit
- VII. Annual Events in Kansas
- VIII. Government

IX. History

X. Famous Kansans

Questions

- What is the origin of the name *Kansas*?
- What is Hollenberg Station?
- What early trails went through Kansas?
- Why was the state once called "Bleeding Kansas"?
- Who was the first woman mayor in the United States?
- Where did she serve?
- What kind of wheat did Mennonites bring to Kansas?
- How did the United States obtain the land which makes up Kansas?
- About how many lakes does Kansas have?
- What is the most important manufacturing activity in Kansas?
- What was the Lecompton constitution?

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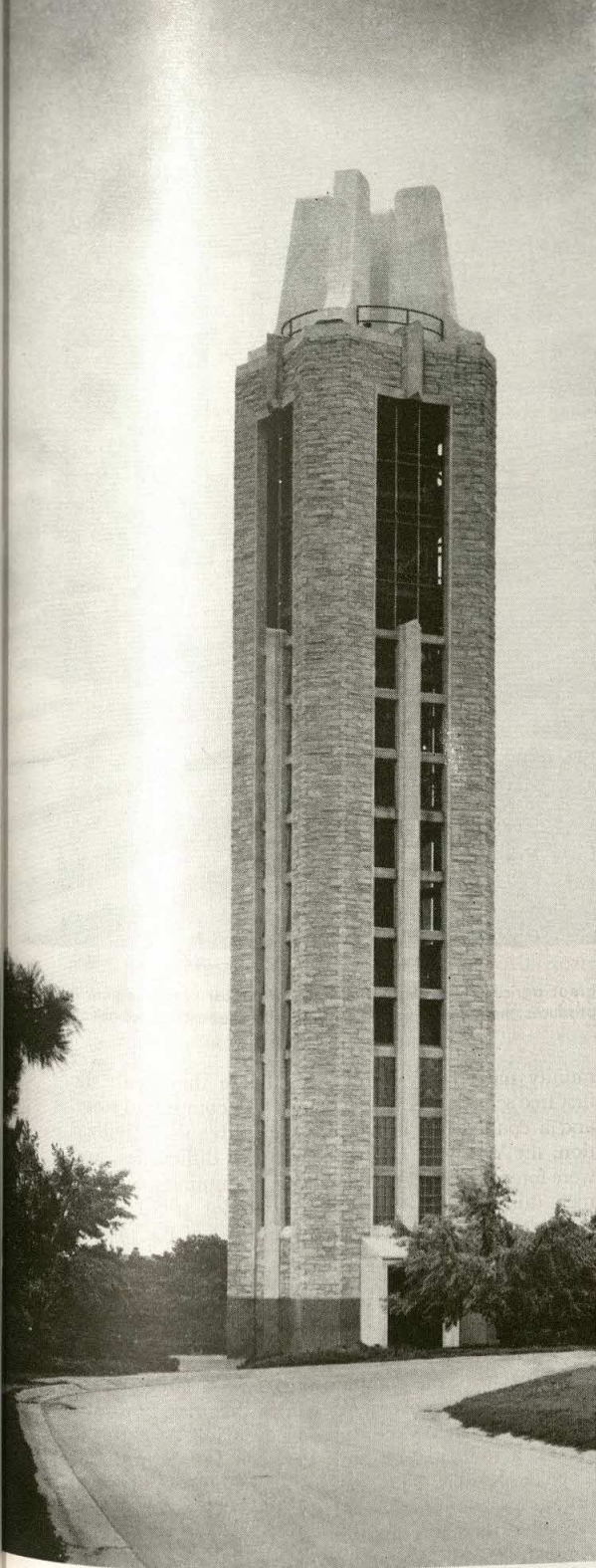
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KANSAS, UNIVERSITY OF, is a state-supported co-educational school at Lawrence and Kansas City, Kans. The campus at Lawrence includes the college of liberal arts and sciences, and the schools of business, education, engineering, fine arts, journalism, law, pharmacy, and the graduate school. The school of medicine and the department of nursing are located on the Kansas City campus. The university also provides training in music and in physical therapy at Kansas City.

The library contains special collections on ornithology, and on such authors as Cervantes, James Joyce, D. H. Lawrence, and William Butler Yeats. The astronomy observatory has a 27-inch reflecting telescope and a 6-inch refracting telescope. The university's museum of natural history and the art museum are located on the Lawrence campus.

The school's colors are crimson and blue, and its athletic teams are called the Jayhawkers. "I'm a Jayhawk" is a popular school song. The University of Kansas was founded in 1864. For enrollment, see UNIVERSITIES AND COLLEGES (table).

RAY NICHOLS



Maurice Prather

The University of Kansas at Lawrence has a *campanile*, or bell tower, above, built in 1951 as a World War II memorial. Green Hall, right, houses the university's School of Law. It was named after "Uncle Jimmy" Green, dean of the School of Law from 1879 to 1919. His statue stands in front of the hall.



Kansas Industrial Development Commission
Shawnee Mission Outside Kansas City dates from the 1830's. The Kansas legislature met there in 1854.

KANSAS CITY, Kans. (pop. 121,901; alt. 750 ft.), is an industrial city in the northeast corner of the state. It lies on the Kansas-Missouri border along both banks of the Kansas River, near the point where the Kansas and Missouri rivers meet. Kansas City, Mo., is directly across the Kansas River. Kansas City ranks as the second largest city in Kansas. It forms part of the important industrial center known as Greater Kansas City. This metropolitan area also includes Kansas City, Independence, and North Kansas City, all in Missouri. For location, see KANSAS (color map).

Kansas City is the home of the University of Kansas Medical Center. It has about 50 public and 20 parochial schools, two junior colleges, two theological seminaries, and conservatories for music and fine arts. The city has about 250 churches. The central library in Kansas City includes about 20 branches. Other attractions in the city are a civic music association, a civic symphony, and over 20 parks.

Kansas City has become a great industrial center.

Maurice Prather





Grain Elevators and Markets at Kansas City, Kans., line the shores of the Kansas and Missouri rivers. The city ranks as a

Kansas City C. of C.

great agricultural center for the country's vast plains region. It produces many grain products and large quantities of meat.

Most of the people in the city work in the manufacturing industries. The city has more than 300 manufacturing firms. Products include automobiles, chemical products, fabricated metals, farm implements, foods, grain, paper containers, petroleum products, soaps, and steel products. One of the largest livestock markets in the United States is located in Kansas City, and meat-packing is a leading industry. During World War II, the city's factories produced various types of airplanes and landing craft for the armed services.

Twelve railroads and several bus and freight lines serve Kansas City. Fairfax Field is one of the most modern airports in the country. A number of bridges across the Kansas River connect Kansas City with its sister city in Missouri.

The French missionary, Father Jacques Marquette, explored the Kansas City area in the 1670's. Lewis and Clark camped on the site of the city in 1804, during their exploration of the Louisiana Purchase. Today, many visitors stop at Kaw Point, the site of Lewis and Clark's camp. In 1818, the surrounding territory was made part of a reservation, which was given to the Delaware Indians. The Wyandot Indians, an industrious tribe from Ohio, purchased the land from the Delaware in 1843. That same year, they laid out a com-

munity named Wyandot City. There they built the first free school in Kansas, a church, a communal store, and a council house. Despite their advanced civilization, the Wyandot met with financial difficulties, and were forced to sell their flourishing community to white men during the 1850's. The Wyandot tribal burial ground has been preserved in the heart of the present Kansas City.

In 1858, white settlers incorporated the former town of Wyandot City under the name of Wyandotte. A year later, the town received its city charter. In that year, the Kansas Constitution was drawn up in Wyandotte. The citizens of the community played a large part in the antislavery movement. Many Negroes from the South settled in Wyandotte after the Civil War. In the 1860's, a railroad was built between Wyandotte and Topeka, Kansas. The first packing house in the city began operation in 1868. The present Kansas City was formed in 1886, by combining the towns of Armourdale, Armstrong, and Wyandotte. Argentine was added in 1910, and Rosedale became part of Kansas City in 1922. In 1951, Kansas City suffered severe floods which damaged much of the city's business district.

The seat of Wyandotte County, Kansas City has a commission form of government.

WILLIAM F. ZORNOW

KANSAS CITY, Mo. (pop. 475,539; alt. 750 ft.), ranks as the second largest city in the state. It lies on the western border of Missouri at the meeting point of the Kansas (Kaw) and Missouri rivers. Saint Louis is about 250 miles to the east, and Chicago about 480 miles to the northeast (see MISSOURI [color map]).

Kansas City is often called *The Gateway to the Southwest*, because it ranks as one of the largest marketing and transportation centers in the United States. It was probably named for the Kansa Indians, a tribe that once lived in the region. Early settlers called it *Westport Landing*.

Kansas City, Mo., together with Kansas City, Kans., North Kansas City, Mo., Independence, Mo., and a number of suburbs in both Kansas and Missouri, make up Greater Kansas City. This large metropolitan area has a total population of over 1,000,000. The cities in Greater Kansas City use the same railroad stations, streetcar system, and telephone service. The Intercity Viaduct, which stretches for about two miles, connects Kansas City, Mo., with Kansas City, Kans.

Industry and Trade

Industry. Kansas City is the second largest grain-milling center in the United States. Each year several million head of livestock are sold here. The city's stockyards rank among the largest in the country. The Kansas City Livestock Exchange is the largest in the United States. The American Royal Livestock Show is held in Kansas City each fall. Meat packing is a major industry in the city.

Other important industries in Kansas City include the manufacture of clothing, food, and petroleum products. Factories in Kansas City also produce bakery goods, cattle feed, chemicals, dairy products, and iron and steel. Kansas City ranks third among American cities in the production of flour and soap.

Trade. On any workday, long freight trains and hundreds of motor trucks move into Kansas City. They carry grain, hay, cattle, and hogs from the surrounding area. Other trains and trucks move out of the city, carrying automobiles, dairy products, farm machinery, processed foods, tools, and other products.

Kansas City is the country's largest winter-wheat market and the third largest general grain market. It serves as a leading wholesale center, especially in the distribution of agricultural products, farm equipment, lumber, machinery, and wearing apparel. It ranks first



Kansas City Chamber of Commerce

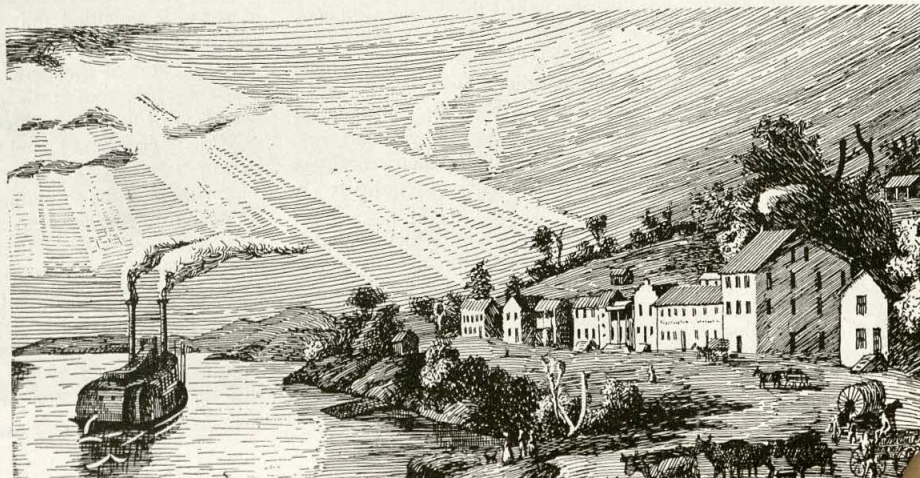
Tall Skyscrapers Dot the Kansas City, Mo., Skyline. The city is a major U.S. distribution center for cattle and grains.

in the distribution of farm machinery, kafir, milo, and seeds. It is second among United States cities as a trading center of fruits and vegetables and is also second in the capacity of its grain elevators. The city ranks third in the distribution of butter, eggs, and poultry.

Kansas City has many retail specialty shops, department stores, and mail-order houses. Country Club Plaza is known as one of the country's first outlying shopping centers.

Transportation. Twelve railway lines enter the city.

An Old Print of Kansas City, Mo., shows the city when it was little more than a frontier fur-trading post. In early days it was called *Westport Landing*.



KANSAS CITY

Several bus lines, carrying both freight and passengers, operate out of Kansas City. The city is served by seven federal highways. Municipal Airport, Fairfax Field, and Grandview Air Force Base are large airports in the Kansas City area.

Kansas City built one of the largest railroad stations in the country in 1914. The main building covers 15 acres. A system of tracks, built below the street level to Union Station, cost \$50,000,000.

Cultural Life

Education. Kansas City has more than 100 public schools, and many institutions for special training. These include schools of medicine, dentistry, law, engineering, music, business, and domestic science. Kansas City also has religious, private, and preparatory schools. It serves as the home of the University of Kansas City, Rockhurst College, and the College of Saint Teresa.

The Arts. The William Rockhill Nelson Gallery of Art and the Atkins Museum of Fine Arts, the Kansas City Art Institute, and the City Art Museum are located in Kansas City. The Nelson Gallery is named for William Rockhill Nelson, famed publisher of the *Kansas City Star*. Nelson provided a \$12,000,000 trust fund for the purchase of art works. The art collection is housed in one of the finest museum buildings in the country. It has an outstanding collection of Oriental art, including works from China, India, Indochina, and Japan. It also has an excellent collection of American art. The Kansas City Public Library houses more than 500,000 volumes. The Linda Hall Library of Science and Technology supplements the library resources of the University of Kansas City.

The Scout, a bronze equestrian statue in Penn Valley Park, is among the many examples of architectural sculpture in Kansas City. Many residents of the city contributed funds to erect the *Victory Memorial* to honor heroes of World War I. The 280-foot-high memorial stands on the Union Station Plaza.

The city-owned Starlight Theater in Swope Park presents musicals each summer. The city also has a philharmonic orchestra.

Kansas City has two daily newspapers, the *Kansas City Star* and the *Kansas City Times*. The same company publishes both papers. The weekly *Kansas City Call*, a Negro newspaper, has a wide circulation in the Middle West. Another weekly, also called the *Kansas City Star*, circulates chiefly among farmers in the Kansas City area. Kansas City has the third largest Associated Press office in the world. Many other news agencies have offices in Kansas City. The city serves as a central exchange point for news dispatches going west and east. The Midwest Research Institute, which conducts scientific research to aid commerce and industry, is located there.

Public Buildings. The Civic Center, which includes the Jackson County courthouse, the city hall, the federal courts building, and a police station, dates from the 1930's. Kansas City's municipal auditorium covers a city block. Its seating capacity of 24,000 makes it one of the largest auditoriums found anywhere in the United States.

Recreation. The Kansas City park system covers more than 3,700 acres. About 150 miles of park drives and boulevards wind through the city. Cliff Drive, which is cut into a hillside, has high, rough rocks on one side. The other side offers a view of the Missouri River. Swope Park covers 1,386 acres and is the largest park in the city. Kansas City has an American League baseball team, the Kansas City Athletics.

History and Government

François Chouteau founded a trading post on the Kansas City site in 1821 (see CHOUTEAU [François]). The site became known as *Chouteau's*, or *Westport, Landing*. In 1839, the town was settled under the name of *Kansas*, originally spelled *Kanzas*. For many years, the town served as a chief trading center for New Mexico. Traffic went along the Santa Fe Trail, which cuts through the city. Monuments and public parks now mark the original route. Kansas City was incorporated as the *Town of Kansas* in 1850. It received the name of *City of Kansas* three years later. The present name was adopted in 1889.

The first post office in Kansas City opened in 1845. The first railroad started operation in 1860. In 1869, the city's first bridge across the Missouri River was completed. Kansas City adopted a council-manager form of government in 1926. A reform movement in 1940 defeated the Democratic party machine, led by Thomas J. Pendergast. The machine had controlled city affairs for many years.

Kansas City served as a war industry center during World War II. The city suffered one of the worst floods in its history in 1951. During the 1950's, the city embarked on a major redevelopment program. Slum areas were removed and steps taken to prevent the formation of new slums. A large new office building opened in 1954, and many other buildings were also constructed. The program included plans for new highways, a large underground parking area, public housing, and additional bridges across the Missouri River. NOEL P. GIST

See also MISSOURI (color picture).

KANSAS CITY, UNIVERSITY OF, is a privately endowed university at Kansas City, Mo. It includes a college of liberal arts, and schools of dentistry, education, law, pharmacy, and business administration. The university also offers evening and summer courses. It was founded in 1929. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KANSAS-NEBRASKA ACT was passed by Congress in 1854. It provided that two new territories, Kansas and Nebraska, were to be made from the Indian land that lay west of the bend of the Missouri River and north of 37 degrees north latitude. Senator Stephen A. Douglas of Illinois introduced the bill into Congress.

Midwesterners had tried to get a new territory organized in Nebraska for four years. They wanted to see the region opened for settlement. Douglas was influenced by the Midwesterners, especially Missourians, and may also have been influenced by his desire for a railroad from Chicago to the Pacific Coast.

Douglas included in his bill a provision for "popular sovereignty" in Kansas and Nebraska. This provision stated that all questions of slavery in the new territories were to be decided by the settlers. It was designed to win the support of the Southern Congressmen. The



"The Scout," a Statue by Cyrus Dallin, Watches Over the Tall Buildings of the Kansas City, Mo., Skyline.



Massie, Missouri Resources Div.

The Vast Kansas City Stockyards Lie on the State Line Separating Missouri and Kansas.

KANSAS RIVER

slavery provision was directly contrary to the Missouri Compromise of 1820, which had declared that all land in the Louisiana Purchase north of 36° 30', except for the state of Missouri, was to be free. Douglas also was persuaded by the Southerners to declare the Compromise "inoperative and void."

Antislavery people furiously attacked the Kansas-Nebraska Bill. The debate in Congress was long and bitter. But President Franklin Pierce supported the bill, and it became law. The Kansas-Nebraska Act made slavery legally possible in a vast new area. It also revived the bitter quarrel over the expansion of slavery which had died down after the Compromise of 1850, and may have hastened the Civil War. JOHN D. HICKS

See also COMPROMISE OF 1850; DOUGLAS, STEPHEN A.; MISSOURI COMPROMISE; SLAVERY; SQUATTER SOVEREIGNTY.

KANSAS RIVER. See KANSAS (Rivers and Lakes).

KANSAS STATE COLLEGE OF PITTSBURG is a state-supported coeducational school at Pittsburg, Kans. Courses in liberal arts, sciences, and industrial and vocational education lead to B.A., B.S., and M.S. degrees. The college was established in 1903. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KANSAS STATE TEACHERS COLLEGE is a state-supported coeducational school at Emporia, Kans. It has schools of liberal arts and sciences, home economics, industrial arts, physical education, teacher training, business, fine arts, and library science. Courses lead to bachelor's and master's degrees. The college was founded as Kansas State Normal School in 1863. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KANSAS STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE is a state-supported coeducational school at Manhattan, Kans. It has schools of agriculture, arts and sciences, engineering and architecture, home economics, veterinary medicine, and a graduate school. Courses are also offered in feed technology, wildlife conservation, nuclear engineering, and restaurant management. Kansas State was founded in 1863 as a land-grant college. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KANSAS WESLEYAN UNIVERSITY is a coeducational school at Salina, Kansas. It is related to the Methodist Church. Founded in 1886, Kansas Wesleyan offers courses leading to bachelor's degrees. For enrollment, see UNIVERSITIES (table).

KANT, KAHNT, IMMANUEL (1724-1804), was a German philosopher. The central problem of his chief work, the *Critique of Pure Reason* (1781), is the nature and limits of human knowledge. This problem seemed important to him because of David Hume's findings. Until Hume's time, almost everyone had taken for granted that we are justified in making generalizations based on a few cases. "All bodies gravitate" is an example of this kind of generalization. Hume asked how we can possibly know that *all* bodies gravitate, since we have seen and measured only a few of them. He challenged philosophers and scientists to produce evidence that would allow us to make assertions about things we have not actually experienced (see HUME, DAVID).

Kant's Ideas. Kant believed that it is not possible to find such evidence as long as we continue to think

of the mind and its objects as separate things. He held instead that the mind is actively *involved* in the objects it experiences. That is, it organizes experience into definite patterns and arrangements. Therefore, we can be sure that all things capable of being experienced at all are arranged in these patterns, even though we may not yet have experienced them. We can have knowledge of what has not been experienced as well as what we have already experienced.

This answered Hume's challenge, but it meant having to abandon any claim to know things as they are in themselves, things in which the mind is not involved. Some philosophers regarded this refusal to claim absolute knowledge as too serious a limitation on a system of philosophy. Others argued that we have an intuitive, nonrational, knowledge of things.

Other Works. In addition to his *Critique of Pure Reason*, Kant also wrote on aesthetics and ethics. In ethics, he tried to show: (1) that doing one's duty is far more important than being happy or making other people happy, and (2) that even assuming that scientists can predict what we are going to do, the predictions do not conflict with our use of free will. Therefore, the predictions have no bearing on our obligation to live morally. Kant's chief work on ethics is the *Critique of Practical Reason* (1788).

Kant never traveled. He was born and lived all his life in Königsberg, in East Prussia. He taught near Königsberg from 1746 to 1755, and then at Königsberg University until his death. His work was epoch-making because he established the main lines for philosophical developments since his day.

KANTOR, MACKINLAY (1904-), a versatile American author, wrote two notable Civil War novels. *Long Remember* (1934) pictures the Battle of Gettysburg with vivid realism. *Andersonville* (1955) describes the horrors of a Confederate prison camp in Georgia. This book won a Pulitzer prize in 1956. *Lee and Grant at Appomattox* (1950) and *Gettysburg* (1953) are children's books. He also wrote *The Voice of Bugle Ann* (1935), a tale of a Missouri fox hunter's hound; *But Look, the Morn* (1947), an autobiography; and *Signal Thirty-Two* (1950), about New York City policemen.

Kantor was born in Webster City, Iowa, and began his career by helping his mother edit a newspaper. During World War II, as a correspondent with the Royal Air Force in England, he flew many combat missions and was decorated by the British for "courage and initiative."

HARRY R. WARFEL



Historical Pictures

Immanuel Kant

Mackinlay Kantor

Steinmetz, New American Library





The Art Institute of Chicago

KAO K'O-KUNG became famous for his delicately painted landscapes. This detail comes from one of his hanging scrolls.

KAO K'O-KUNG (late 1200's) was a Chinese painter of Turkish descent. He became a high-ranking government official, and led the life of a cultivated Chinese gentleman. He loved to wander through the picturesque mountain valleys of the southeast, recording his impressions in landscapes painted for his friends. He emphasized the play of atmospheric effects through soft, irregular ink washes.

ALEXANDER C. SOPER

KAOLAN. See LANCHOW.

KAOLIN, *KAY' oh lin*, is a pure white clay made of feldspar which has decomposed. Its chemical formula is $Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$. It contains silica, alumina, and water. It can be ground into a fine powder, and is widely used for making the highest grades of pottery. The word *kaolin* comes from a Chinese word meaning *high hill*. Kaolin is also called *China clay* and *porcelain clay*.

Important kaolin-producing countries include the United States, Great Britain, France, and Germany. The leading kaolin states include Georgia, South Carolina, Pennsylvania, Florida, and North Carolina.

Kaolin is either mined dry with a shovel, or dislodged with jets of water and sucked into a pump system. Then it is thoroughly washed and put through various separation processes to remove impurities such as sand, mica, and iron-oxide particles. Excess water is next removed and the clay is formed into cakes, which are dried and shipped to the potteries for use.

Kaolin is also used in textiles, as a coating for paper, and as a filler for rubber tires.

GEORGE J. LANE

See also DRESDEN CHINA; PORCELAIN; POTTERY.

KAPA. See HAWAII (The People).

KAPIOLANI PARK. See HAWAII (Interesting Places).

KAPITZA, PETER (1894-), a Russian physicist, became well known for his work in low-temperature physics and in magnetism. From 1924 to 1935, he worked on magnetism at the Cavendish Laboratory and as director of the Royal Society Mond Laboratory, both in Cambridge, England. In 1935 he visited Russia,

KARA SEA

and was not allowed to return to England. He became director of the Institute for Physical Problems of the Academy of Sciences of the U.S.S.R. Kapitza was born at Kronshtadt, Russia.

R. T. ELLICKSON

KAPOK, *KAY' pahk*, is a light, soft, lustrous, cotton-like fiber. It comes from the seed pods of the kapok, or silk-cotton, tree, a relative of the baobab and the balsa. The kapok tree grows in Indonesia, the Philippines, India, Ceylon, and tropical America.

After the ripe fruit of the kapok tree is picked, the seeds and fibers are taken out and dried in the sun. Workers then separate the seeds and fibers by stirring them in a basket until the heavy seeds drop to the bottom. Then the fibers are packed into bales.

Kapok is light and verminproof, and does not absorb water readily. These qualities make it useful as a filling for mattresses and upholstered furniture, and also as a substitute for cork in life jackets.

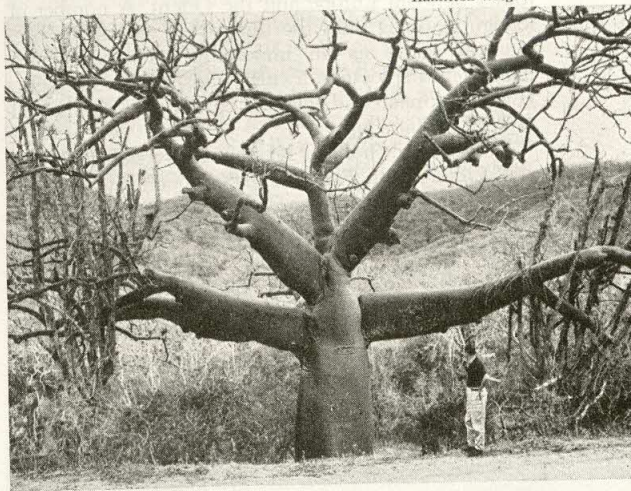
Kapok seed yields an oil used in making soap and cattle feed. The tree produces a gum used in medicine. The light, soft wood is used for canoes and rafts.

Scientific Classification. Kapok is obtained from a tree in the bombax family, *Bombacaceae*. The silk-cotton tree is genus *Ceiba*, species *pentandra*.

ARTHUR KOEHLER

The Kapok Tree bears fruit for about 20 years. The ripe fruit, called seed pods, contains lightweight kapok fibers which are used in such products as life jackets and mattresses.

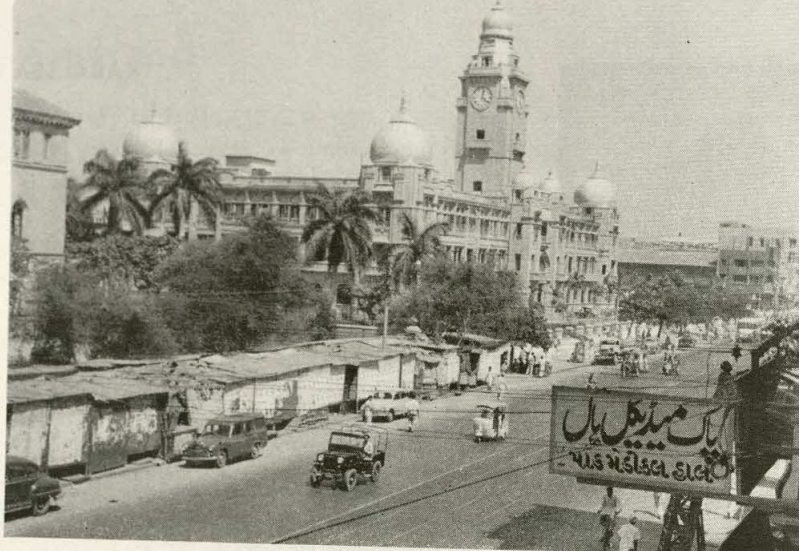
Hamilton Wright



KARA KUM, *KAH rah KOOM*, is a large desert that occupies nine tenths of the Turkmen Soviet Socialist Republic in Russia. It is 600 miles long, and from 200 to 250 miles wide. Herdsmen raise sheep, goats, and camels in the desert. Farmers grow crops in irrigated oases. A reservoir built in the 1950's, and the navigable Turkmen Canal, are aids to irrigation.

KARA SEA, an arm of the Arctic Ocean, lies off the northern coast of Siberia, between the Yamal Peninsula and the Novaya Zemlya Islands. The Kara Sea is about 300 miles long and 200 miles wide. Ice blocks the sea most of the year, but shipping to the Yenisey River takes place for about two months in summer. Kara Strait connects the sea with the Barents Sea which lies to the west.

BOSTWICK H. KETCHUM



Bunder Road in Karachi cuts through the heart of the city and leads to the Karachi harbor. The Municipal Building, background, and other public buildings line this road.

Reitz, Pix

KARACHI, *kah RAH chee* (pop. 905,781; met. area 1,009,438; alt. 50 ft.), is the largest city and chief port of Pakistan. It was the first capital of the country. It lies on the Arabian Sea over a hundred miles from the eastern border of West Pakistan. For location, see **PAKISTAN** (color map). Railroads link Karachi to the Upper Indus Valley and to East Pakistan. Karachi's international airport is a major stop on air routes between Europe and the Orient. A number of foreign shipping lines use the city's excellent harbor. Karachi serves as an important industrial center, manufacturing leather, textiles, glass, tile, and cement. It also has metal and engineering works, sawmills, and railroad repair shops.

Karachi is the home of Karachi University. The General Library, the Pakistan Institute of International Affairs, and a museum are located in Frere Hall there.

Karachi was founded as a fort in the early 1700's, and seized by the British in the mid-1800's. It served as the capital of Pakistan from 1947 to 1960, when Rawalpindi became the capital.

ROBERT I. CRANE

KARAJAN, *KAH rah yahn*, **HERBERT VON** (1908-), is an Austrian conductor. He became musical director of the Berlin Philharmonic Orchestra in 1955, and artistic director of the Vienna State Opera in 1956. He also served as principal conductor of La Scala opera in Milan, the Salzburg Festival, and the Philharmonia Orchestra of London. He made his American debut in 1954. Karajan was born in Salzburg. DAVID EWEN

KARAKORAM RANGE. See **HIMALAYA**.

KARAKUL, *KAR uh kul*, is a fat-tailed sheep from which we get the beautiful fleeces called Persian lamb, broadtail, and caracul. Karakuls are lean and have narrow backs. But they can store up enough fat in their tails and back legs to live on when food is scarce. The rams, or males, have wide-spreading, spiral horns, but the ewes, or females, usually have none. The coarse fleece of the adult is white, yellowish, gray, brown, or black. Young lambs have a silky fleece, usually black, but occasionally in shades of brown, tan, and gray. The fleece has a high luster, and is often tightly curled until the fifth day after birth.

In the market, lambskins are sold as broadtail, Persian lamb (formerly *Astrakhan*), and caracul. Broadtail



USDA

The Wool of the Karakul Has Great Commercial Value.

is the most expensive. It has a silky, rippled appearance, and usually comes from lambs that were born too soon. Persian lamb is the tightly curled pelt of lambs from 3 to 10 days old. Caracul is the wavy fur of lambs not older than 2 months.

Most of the skins are produced in central and southwestern Asia, India, southwestern Africa, and southeastern Europe. The skins of young goats are sometimes called *caracul*.

MAX BACHRACH

KARAMANLIS, CONSTANTINE. See **GREECE** (The 1950's).

KARAT, is a variant of carat. See **CARAT**.

KARELIA, *kuh REE lih uh*, is a self-governing republic in the northwestern part of the Russian Soviet Federated Socialist Republic. It lies east of Finland and south of the Murmansk *oblast*, or region. See **RUSSIA** (color map). Karelia covers 68,900 square miles, and has a population of about 649,000. Rocky ridges, great pine forests, and more than 2,000 lakes cover much of the land. Lumbering is the main industry. The largest city is Petrozavodsk on the western side of Lake Onega.

Karelia came under Russian rule in the late Middle

Ages. In 1923, it was made one of the states of the R.S.F.S.R., and, in 1940, one of the states of Russia. In 1956, the Supreme Soviet made it a part of the R.S.F.S.R.

THEODORE SHABAD

See also LAKE ONEGA.

KARELIAN ISTHMUS is an arm of land in the northwestern part of Russia that separates the Gulf of Finland from Lake Ladoga. Part of the isthmus once belonged to Finland, but the entire area was given to Russia by a treaty signed in 1944.

KAREN. See BURMA (The People; Rebellion).

KARL FRANZ JOSEPH. See CHARLES I.

KARLFELDT, ERIK AXEL (1864-1931), a Swedish poet, became famous for his ballads, love poems, narratives, and poems describing landscapes. In 1918, he declined the Nobel prize for literature, but the prize was awarded to him in 1931, just after his death. Karlfeldt was born in the village of Karlbo in central Sweden. He studied at the University of Uppsala, and then worked as a teacher and librarian. His first book of poems appeared in 1895. He was elected to the Swedish Academy in 1904. His works include *Dalecarlian Frescoes in Rhyme* (1901) and *Songs of Love and the Wilderness* (1895).

HASKELL M. BLOCK

KARLSBAD, KARLŠ baht, or **CARLSBAD, KARLŠ bad** (pop. 30,915; alt. 1,945 ft.), is a famous health resort in Czechoslovakia. Its name in Czech is KARLOVY VARY. It lies on the Ohre River 70 miles west of Prague (see CZECHOSLOVAKIA [map]). The mineral springs in Karlsbad attract thousands of visitors each year. Water from these springs is considered healthful. It contains bicarbonate of soda, sulfate of soda, and common salt. The most famous of the city's 19 springs is the *Sprudel*, which has a temperature of 165°F. and yields almost 2,000 quarts of water a minute.

Chief products of Karlsbad are glassware, pottery, and china. Nearby hills are rich in coal and kaolin, a clay used in making china.

S. HARRISON THOMSON

KARLSRUHE, KAHRLS roo uh (pop. 222,600; alt. 377 ft.), is a metals and chemical industry center in West Germany, near the French border. For location, see GERMANY (map). The city is noted for its public squares with their beautiful fountains and monuments. It is the seat of two of West Germany's highest courts, the Federal Constitutional Court and the Federal Supreme Court. It is also a railroad center.

JAMES K. POLLOCK

KARMA. See TRANSMIGRATION OF THE SOUL.

KÁRMÁN, THEODORE VON. See VON KÁRMÁN, THEODORE.

KARNAK, TEMPLE OF. See ARCHITECTURE (picture, Ancient Times); EGYPT, ANCIENT (The Arts; color picture, The Temple of Amon-Re).

KARRER, KAHR ur, PAUL (1889-), a Swiss chemist, shared the 1937 Nobel prize for chemistry. He became famous for his researches on vitamins, especially vitamin A, and the carotenes, which have similar effects on the body. He also worked on vitamins E and K. His research led him to study vegetable dyestuffs, and he became an authority on the compounds called *flavones*, the parent substances of many yellow plant pigments. Karrer was born in Moscow.

K. L. KAUFMAN

KARROO. See SOUTH AFRICA (Land Regions).

KASAVUBU, JOSEPH. See CONGO (History).

KASHMIR or **CASHMERE, KASH mir**, is a large area on the northern border of India. Kashmir has been the

KASHMIR

subject of a dispute between India and Pakistan since 1947. The capitals of Kashmir, by traditional use, are Srinagar in the summer and Jammu in the winter.

Location, Size, and Surface Features. Kashmir covers an area of 82,258 square miles, or about the area of Kansas. Two mountain ranges, the Karakoram and the Himalaya, cut across Kashmir diagonally from the northwest to the southeast. Two of the world's highest peaks, Mount Godwin-Austen (28,250 feet) and Nanga Parbat (26,660 feet), are in northern Kashmir. For the location of Kashmir, see INDIA (color map).

The Indus River flows northwestward through Kashmir, separating the two ranges of mountains. A tributary of the Indus, the Jhelum, flows through the famous Vale of Kashmir. Here the climate is mild and the soil well watered. The mountains have valuable forests.

The People and Their Work. About 4,410,000 people live in Kashmir. Most of them are Moslems, but about 23 out of every 100 belong to other religions. Culturally, both Moslems and Hindus belong to the same group, with the same language and customs. Most of the people work on farms. Others work in small industries, making shawls, rugs, and carpets from cashmere wool.

All the farm land in the Vale of Kashmir is under intense cultivation. Only about six out of every 100 acres in Kashmir can be used for growing food, and some farms are perched on the sides of hills. Corn and rice are the major crops, and there are many orchards and vineyards. Roses and jasmine provide oil used in perfumes. Kashmir is also famed for its wool and silk.

History and Government. Prior to British withdrawal from the subcontinent of India in 1947, an absolute monarch ruled Kashmir. In 1947, the subcontinent was divided into two nations: Pakistan (Moslem) and India (Hindu). The division did not include Kashmir, which was ruled by hereditary princes. The Maharaja of Kashmir, a Hindu, sought to join with India. Pakistani Moslems invaded northern Kashmir in an attempt to unite Kashmir with Pakistan. The Maharaja met this threat by formally making Kashmir a part of India. He formed a parliamentary government, and gave many of his

The Vale of Kashmir Lies Along the Jhelum River.

Ewing Galloway



KASKASKIA

powers to a cabinet. War raged until 1949, when the United Nations arranged a cease-fire, and set up a truce line. The line left the northwestern third of Kashmir under Pakistani control. The rest of the area was controlled by pro-Indian factions in a new assembly. The assembly abolished the 105-year-old monarchy, and accepted a status of near-independence in the Union of India. But a so-called Free Kashmir Movement, made up of Moslems, refused to recognize any of the changes.

In 1956, India defied both Pakistan and the UN, and formally annexed Kashmir as the state of Jammu and Kashmir. Rioting followed among the predominantly Moslem population. In 1957, India's Prime Minister Jawaharlal Nehru declared the Kashmir assembly dissolved, but the area remained in dispute. Communist Chinese troops occupied a small part of Ladakh in northeast Kashmir in 1959.

ROBERT I. CRANE

See also HOUSEBOAT (picture).

KASKASKIA. See ILLINOIS (French and English Control).

KASSEL, KAHS *el* (pop. 192,500; alt. 476 ft.), lies on the banks of the Fulda River, in West Germany. The city's products include engines, scientific instruments, and chemicals. It has produced some of the world's best lithography.

JAMES K. POLLOCK

KASSITE. See BABYLONIA (Invasions).

KATANGA, kah TANG *gah*, is a mineral-rich region in Central Africa that became a world trouble spot in the 1960's. The capital and largest city of Katanga is Élisabethville.

Katanga once formed part of the Belgian Congo. When the Congo became an independent republic in 1960, Katanga also declared itself separately independent. Fighting broke out when attempts were made to bring Katanga back into the Republic of Congo. Congolese and United Nations troops fought against the rebellious Katangans.

Description. Lying just south of the equator, Katanga forms the southeastern corner of Congo. It covers 191,879 square miles. Much of Katanga is on a plateau 2,000 to 5,000 feet above sea level. Tanganyika lies to the east, Northern Rhodesia to the south, and Angola to the west. For location, see CONGO (map).

Katanga produces most of the world's cobalt and radium, and important amounts of copper, tin, uranium, zinc, and other minerals. Katanga also has cattle farms and citrus fruit plantations. It formerly supplied about half the Belgian Congo's revenue.

Katanga has a population of about 1,700,000. Most of the people are members of various Negro tribes.

History. Katanga seceded as a province of Congo on July 9, 1960, nine days after Congo became independent. Moïse Tshombe, premier of the Katanga provincial government, became president of the new Katanga national government. He opposed efforts to reunite Katanga with Congo. But in March, 1961, he and Congolese leaders discussed a plan to replace the Congo republic of six provinces with a confederation of 20 sovereign states (see CONGO [History]). They met again in April at Coquilhatville, in Equator province. Congolese soldiers arrested Tshombe when he walked out on the meeting. Tshombe finally won his release in June by agreeing to end Katanga's secession. But when

he returned to Élisabethville, he reversed himself and refused to rejoin the Congo.

In September, 1961, United Nations troops tried to force Katanga to rejoin Congo. Fighting broke out between UN and Katanga forces. UN Secretary-General Dag Hammarskjöld scheduled a meeting with Tshombe to try to arrange a cease-fire agreement. En route to the meeting, Hammarskjöld was killed when his plane crashed near Ndola, Northern Rhodesia.

KATCINA, kah CHEE *nuh*, or **KATCHINA**, is the name of a religious ceremony of the Hopi Indians, and of carved wooden dolls used in the ceremony. Each winter the Hopi dedicate special services to the spirits of the dead in the hope that this will bring a good harvest. The dolls represent spirits. See also DOLL (picture, Unusual Dolls); HOPI INDIANS.

KATMAI NATIONAL MONUMENT, KAT *mye*, is in southwestern Alaska. It contains a dying volcanic region, including "The Valley of Ten Thousand Smokes," scene of a 1912 eruption. The 2,697,590-acre monument was established in 1918.

KATMANDU, KAHT *mahn DOO* (pop. 106,579; alt. 4,223 ft.), is the capital and largest city of Nepal. It lies on the Bagmati River in central Nepal. For location, see INDIA (color map). Katmandu is an ancient city, and has great palaces built by kings and noblemen of Nepal. Most of the people live in two-story brick houses or in dirty wooden shacks. They worship in the city's many beautiful Hindu and Buddhist temples. The city also serves as the country's trading center.

Nepal's Newars founded Katmandu in A.D. 723. The city remained an independent kingdom until the Gurkhas captured it in 1768, and made it the capital of the kingdom of Nepal.

ROBERT I. CRANE

KATOWICE, KAH *taw VEE tseh* (pop. 198,000; alt. 920 ft.), is a city in south-central Poland. For location, see POLAND (color map). Incorporated in 1867, it passed by plebiscite from Germany to Poland in 1921. It was named Stalinogród in 1953, and Katowice in 1956. Products include cement, chemicals, and machinery.

KATRINE, LOCH. See LOCH KATRINE.

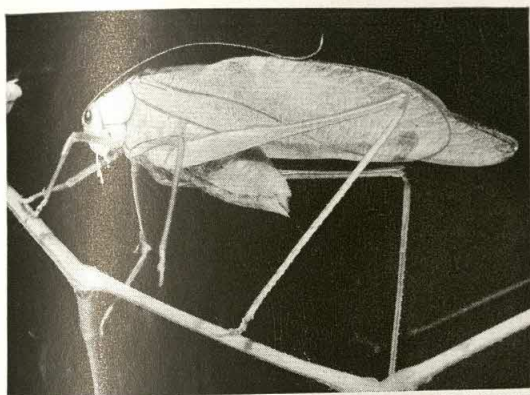
KATTEGAT, KAT *uh gat*, is a strait which forms one of the connecting links between the Baltic and North seas. *Kattegat* is the Scandinavian word for *cat's throat*. The strait lies between Sweden and Denmark. The Kattegat has an area of nearly 10,000 square miles, or about one third the area of Lake Superior, in the United States. It is about 150 miles long and 90 miles wide. Kattegat Strait is dangerous for ships because there are many sand bars, and because of the frequent storms in the region. The eastern shores of the strait are steep and rocky, but the western shores are low and flat. The largest islands in the strait are Laesö, Anholt, and Samsö.

ROBERT O. REID

KATYDID, KAR *tih DID*, is a large greenish insect with long antennae. It is a relative of the meadow grasshopper. Its name comes from the love call of the male insects of certain eastern species. Other species make quite different sounds.

Katydids rub the bases of their front wings together to produce these notes. On the wings there are little cross ridges which form a sort of scraper.

Many katydids begin their song at twilight and keep it up throughout the night. These insects are heard most frequently in late summer and autumn.



Hugh Spencer

The Round-Headed Katydid, or Green Grasshopper. The loud and shrill love call of the male grasshoppers sounds like "katydid-katydid," when they are mating in summer.

Most katydids live in trees and shrubs. They feed on leaves and young twigs, but they do little damage compared to that done by many other insects. Katydids lay their flat, oval, slate-gray eggs from early in the fall until frost appears. Certain kinds of katydids lay them in double overlapping rows, on the edges of leaves and on the twigs of trees. Others slit the edges of leaves with the pointed end of their abdomen, or *ovipositor*, and place their eggs inside. The warmth of early spring causes the eggs to split along the edges, and the small katydids appear. The little ones are long-legged and look like the adult katydids, but the young do not have wings.

Scientific Classification. Katydids make up the family *Tettigoniidae*. The northern katydid is genus *Pterophylla*, species *camellifolia*. The Florida katydid is *Lea floridensis*. The green katydid of Europe, Asia, and Africa is *Phasgonura viridissima*.

CARL D. DUNGAN

See also GRASSHOPPER; MORMON CRICKET.

KAUAI. See HAWAII (The Islands).

KAUFMAN, GEORGE S. (1889-1961), was an American director and playwright. He collaborated with others to write several successful plays. *Of Thee I Sing* (1931), written with Morrie Ryskind, and *You Can't Take It With You* (1936), written with Moss Hart, each won a Pulitzer prize for drama. Kaufman and Hart became a famous playwrighting team, well known for their comedies. Kaufman also worked for many years as a newspaper drama critic and editor in New York City.

Kaufman's plays include *Beggar on Horseback* (with Marc Connelly, 1924), *Dinner at Eight* (with Edna Ferber, 1932), *The Dark Tower* (with Alexander Woollcott, 1933), *The Man Who Came to Dinner* (with Hart, 1939), and *The Solid Gold Cadillac* (with Howard Teichmann, 1952). Kaufman was born in Pittsburgh, Pa., where he attended public schools. GEORGE FREEDLEY

See also CONNELLY, MARC; HART, MOSS.

George S. Kaufman
United Press Int.



KAUNAS, KOW nahs (pop. 214,000; alt. 255 ft.), is a Lithuanian city on the Nemunas River, about 55 miles northwest of Vilnius. See LITHUANIA (map). Kaunas has factories that manufacture farm machinery, heating equipment, chemicals, and textiles. Other plants prepare cattle, lumber, and farm products for market.

Kaunas has suffered damage in many wars. Its name comes from a Lithuanian word that means *battlefield*. Before World War I, Kaunas was only a small Russian garrison town in the interior of the country. After Poland seized the historic capital of Vilnius, Kaunas became the capital of Lithuania. Kaunas was the capital from 1920 to 1939, when Vilnius once again became the capital. Kaunas lost more than one third of its population during World War II.

FRANCIS J. BOWMAN

KAVA, KAH vah, or AVA, is the name of two shrubs related to the pepper plant. They grow in Australia and the Pacific Islands, where the people have cultivated them for centuries. The kavas are erect shrubs. They grow as tall as 5 feet. They have round leaves and small yellowish-cream flowers. The kavas are easy to raise in greenhouses. They are grown from cuttings from the stem. The roots yield a juice called *kavaic acid*. The peoples of the South Pacific use it to make a fermented drink called *kava, ava, or kavakava*.

Scientific Classification. The kavas are in the family *Piperaceae*. The two kinds are genus *Piper*, species *methysticum*, and *P. excelsum*.

HAROLD NORMAN MOLDENKE

KAW INDIANS. See KANSA INDIANS.

KAWASAKI, kah wah sah kee (pop. 445,420; alt. 5 ft.), in Kanagawa prefecture on Honshu Island, Japan, is a suburb of Tokyo. It lies on the west coast of Tokyo Bay. For location, see JAPAN (color map). Founded in the 1100's, Kawasaki served as a post station on the highway south from Tokyo. With the growth of the Tokyo-Yokohama metropolitan area in the late 1800's, Kawasaki became an industrial district. Bombs damaged the city during World War II, but steel and textile factories have been rebuilt there. HERSCHEL WEBB

KAYAK, K'Y ack, is a light Eskimo canoe made of skins stretched over a frame of bone or wood. Eskimos use kayaks to travel, to set fish nets, and to hunt seal or caribou. Kayaks are sometimes 20 feet long, but seldom more than 20 inches wide. The deck top is covered with skin, except for a round cockpit near the middle. The paddler sits in the cockpit with his legs extended for-

Many Eskimos of Alaska and Greenland Use Kayaks to fish and hunt for seal and walrus in open arctic waters.

Bacon, Rapho-Guillumette



KAYE, DANNY

ward. Boating fans in other parts of the world use canvas-covered kayaks.

Kayaks are as fast as modern racing shells, and are even more seaworthy. The cockpit often has an attached flap which the paddler can fasten around himself to keep his craft watertight in rough seas. Sometimes, the paddler practices the sport of kayak rolling. He turns his craft upside down in the water, then twists his paddle strongly, to keep the kayak turning, and pops to the surface right side up.

ELMER HARP, JR.

See also CANOEING; ESKIMO (Transportation); GREENLAND (picture).

KAYE, DANNY (1913-), an American stage and motion-picture comedian, became noted for his lively pantomimes and his command of ingenious songs. He was born DAVID DANIEL KOMINSKI in Brooklyn, N.Y. He made his stage debut in *The Straw Hat Revue* in 1939. His first stage hit was in 1940 in *Lady in the Dark*. Kaye made his motion-picture debut in *Up in Arms* in 1944. He played in *The Secret Life of Walter Mitty*, *Hans Christian Andersen*, and *Knock on Wood*. He made a world tour for the United Nations Children's Fund in 1956.

BOSLEY CROWTHER

KAYE, NORA (1920-), an American ballet dancer, rose from the corps to ballerina with the American Ballet Theatre. She became best known for dramatic roles in *Pillar of Fire*, *Lilac Garden*, and *Fall River Legend*. Miss Kaye was born NORA KOREFF in New York City, and danced at the Metropolitan Opera before joining Ballet Theatre in 1940. Between 1951 and 1954, Miss Kaye danced with the New York City Ballet, but then she returned to Ballet Theatre to dance as prima ballerina.

DORATHI BOCK PIERRE

KAZAKHSTAN, *KAH zahk STAHN*, is the second largest state in Russia. It has an area of 1,061,600 square miles and extends from the Caspian Sea to China. For location, see RUSSIA (color map). Before the Russian Revolution, half the country was desert. But irrigation and new farming methods have made vast areas useful for crops. Kazakhstan is rich in mineral resources, including oil, coal, copper, lead, zinc, and nickel. Most of its 9,301,000 people live by farming and raising cattle and sheep. The capital and chief city is Alma-Ata.

THEODORE SHABAD

KAZAN, *kuh ZAN* (pop. 643,000; alt. 125 ft.), is the capital of the Tatar Autonomous Soviet Socialist Republic. This is a division of the Russian Soviet Federated Socialist Republic, which is the largest state in Russia. Kazan lies on the Volga River, 450 miles east of Moscow (see RUSSIA [color map]). It is an important manufacturing and commercial city. Kazan is a center of culture for the Tartars, or Tatars. The Tartars founded Kazan in the 1400's. Ivan the Terrible, the first czar of Russia, captured the city in 1552. Later, Kazan became an important base for the Russians as they pushed their empire eastward.

THEODORE SHABAD

K.C., abbreviation for *King's Counsel*. See **LAWYER**.

K.C., abbreviation for Knights of Columbus. See **KNIGHTS OF COLUMBUS**.

KEA, *KAY ah*, is a parrot that lives in New Zealand. Another name for it is the *mountain nestor*. Its colors are dull olive-green with red under the wings.

This bird spends the summer in the mountains, and



N.Y. Zoological Society

The Fierce-Looking Kea of New Zealand has a powerful, hooked bill. It uses its bill to dig out insects and roots for food.

migrates to the lowlands in the winter. It eats chiefly insects and fruit. Hungry bands of these birds are said to peck at a sheep until it is exhausted, and then dig their beaks into its back to kill it.

Scientific Classification. The kea belongs to the family *Psittacidae*. It is classified as genus *Nestor*, species *notabilis*.

RODOLPHE MEYER DESCHAUSENSEE

KEAN is the family name of two English Shakespearean actors, father and son.

Edmund Kean (1787-1833) was an orphan found as a baby near Drury Lane Theatre in London. Reared by an actress, he began acting in a touring company at the age of 12. He took his family name from Moses Kean, the manager of the company. In 1814, Kean made his first dramatic triumph as Shylock in *The Merchant of Venice*. He played leading Shakespearean roles for many years, including Iago, Macbeth, and Richard III. Kean was considered the greatest poetic actor of his day. He made much money, but spent it on wild and reckless living.

Charles John Kean (1811-1868), the son, also achieved great success as a Shakespearean actor. But he lacked his father's brilliance.

GLENN HUGHES

KEARNY, *CAR nih*, N.J. (pop. 37,472; alt. 104 ft.), is a manufacturing center in northeastern New Jersey. It lies on the east bank of the Passaic River across from Newark. For location, see **NEW JERSEY** (color map).

Kearny has many large manufacturing plants which

make or process chemicals, linoleum, metal products, meat, paint and varnish, petroleum, telephone equipment, thread, truck bodies, and other products. Shipbuilding is another important industry, and the city has extensive shipyards and dry docks.

Kearny was founded in 1867 and was named after General Philip Kearny (1814-1862), a New Jersey cavalry officer who was killed in the Civil War. The city was incorporated in 1899. It has a mayor-council form of government.

RICHARD P. MCCORMICK

KEARNY, KAHR nih, PHILIP (1814-1862), was an American and Union general. At the outbreak of the Civil War, he became a brigadier general of New Jersey volunteers. He served in all the important battles in the Eastern theater and rose to major general and division commander. He was killed on Sept. 1, 1862, at the Battle of Chantilly, in Virginia.

Kearny was born in New York City. His wealthy family opposed his desire to be a soldier, and he was graduated from Columbia College (now Columbia Univer-

sity). Later, he secured a commission in the army and served until 1846.

Kearny re-enlisted to serve in the Mexican War. He lost an arm at Churubusco and won promotion to the rank of major for his bravery.

In 1851 Kearny resigned to settle near Newark, N.J. He joined the French Army in 1859 and fought in the war against Austria, winning the cross of the Legion of Honor. The state of New Jersey placed his statue in Statuary Hall in 1888.

T. HARRY WILLIAMS

KEARNY, STEPHEN WATTS (1794-1848), commanded the western armies of the United States in the Mexican War. In his service before that, he had helped greatly to open the West to settlement.

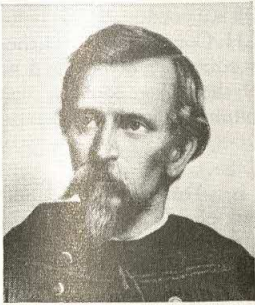
Kearny was born in Newark, N.J. He attended Columbia College (now Columbia University) for one year, but left to join the army in the War of 1812. In 1825 Kearny joined an expedition to the Yellowstone, and after 1828 commanded a number of American frontier posts.

In the Mexican War, Kearny led the armies that conquered New Mexico and California (see MEXICAN WAR [The Occupation]). He appointed John C. Frémont civil governor of California, but soon had a dispute with him when Frémont refused to obey his orders (see FRÉMONT, JOHN CHARLES). The government upheld Kearny, and Frémont was called back to Washington, where he was court-martialed.

Late in 1847, Kearny was ordered into Mexico, and was governor of Veracruz and Mexico City for a few months before his death.

H. A. DE WEERD

KEARSARGE. See ALABAMA (the ship).



Brown Bros.; Culver

Phillip Kearny lost his life at the Battle of Chantilly. He rode into battle, below, with his reins in his teeth, having lost one arm in the Mexican War.



KEATS, JOHN

KEATS, keetz, JOHN (1795-1821), was the most remarkable of the English Romantic poets. Not only did he write some of the purest poetry in any literature, but the best of it was the work of one year.

Keats' background was unpromising for a poet. He was the son of a London stable groom. He attended a good private school at Enfield. But the death of both parents by the time Keats was 15 caused his guardian to withdraw him from school and apprentice him to a surgeon.

However, a friend Keats made at Enfield, Charles Cowden Clarke, the headmaster's son, introduced him to Edmund Spenser's *Faerie Queene*. The delight that Keats felt in Spenser's poetry made him want to be a poet. As a result, he gave up his surgical training and began to write seriously.

His Publications. At the age of 22, he published his first volume of poetry, *Poems by John Keats*, and a year later his second, *Endymion* (1818). *Endymion*, a retelling of an old story about a young shepherd loved by the moon goddess, was attacked savagely by leading critical magazines. Keats' last volume, *Lamia, Isabella, The Eve of St. Agnes, and Other Poems* (1820), contains his best poetry.

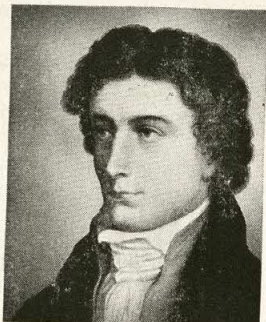
Keats' last years were marked by increasingly bad health. He took a long walking tour in the English lake country and Scotland during 1818, and the fatigue and exposure of the trip brought on throat trouble. By the following year, it was plain that he had contracted tuberculosis. His friends feared the effects of the severe English climate and persuaded him to go to Italy for the winter of 1820. But it was too late. In poor health and suffering from an unhappy love affair, Keats died at Rome in February, 1821, and was buried there. He wrote his own epitaph: "Here lies one whose name was writ in water."

Percy Bysshe Shelley felt that the brutal reviews of Keats' poetry had hastened his death, and in his magnificent elegy, *Adonais*, he bitterly attacked the reviewers. But Keats was too sturdy to have been killed by reviews. He knew that he had not reached his full powers when he wrote *Endymion*, and thought that he would do better work in the future.

His Greatest Work. Keats was right about his work. The poems that he wrote in the year between the autumns of 1818 and 1819 have perhaps never been surpassed by any other poet in a single year. The best are "Hyperion" (incomplete, 1820), "The Eve of St. Agnes," "La Belle Dame sans Merci," "Ode to a Nightingale," "Ode on a Grecian Urn," "Lamia," and "Ode to Autumn." He also wrote many lovely sonnets.

"I have loved the principle of beauty in all things," said Keats. The rich passages of sensuous beauty in his poetry prove this. Unforgettably, he wrote, "A thing of beauty is a joy forever."

C. L. CLINE



Brown Bros.

John Keats

KEBAB. See **FOOD** (Shish Kebab); **IRAQ** (Way of Life).

KEBLE, JOHN. See **OXFORD MOVEMENT**.

KEDESH. See **CITIES OF REFUGE**.

KEEL. See **SAILING** (Hull; Controlling Direction).

KEELBOAT. See **FLATBOAT**.

KEELEY, LESLIE (1832-1900), an American physician, promoted a "cure" for the alcohol, opium, and morphine habits (see **DRUG HABIT**). Keeley founded the Keeley Institute at Dwight, Ill., in 1880 to treat alcoholics and drug addicts by injections of double chloride of gold. Keeley was born in St. Lawrence County, New York, and moved to Canada in 1835. He studied medicine and received his M.D. degree from Rush Medical College in Chicago, in 1864. HENRY H. FERTIG

KEELING ISLANDS. See **COCOS ISLANDS**.

KEENE, LAURA (1826?-1873), became noted in theater history as the first woman to win success as a manager in the United States. She was also a versatile actress. She also played the heroine in *Our American Cousin* at Ford's Theater in Washington, D.C., on the night President Abraham Lincoln was assassinated. She was born MARY MOSS in England.

KEENE TEACHERS COLLEGE is a coeducational state-controlled school in Keene, N.H. Courses lead to bachelor's and master's degrees in education. Chartered as Keene Normal School in 1909, the college took its present name in 1938. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

KEEP. See **CASTLE**.

KEESHOND, KAYS hahnd, is a Dutch dog of Arctic descent, related to the Samoyed, chow chow, and Pomeranian. It is the national dog of The Netherlands. Keeshonden are a familiar sight on Rhine River boats. The keeshond has long, thick, gray hair, tipped with black. Its eyes are slanting and are marked with lines that look like spectacles. Its head is wedge-shaped, and its tail curls tightly. Keeshonden stand 17 to 18 inches high, and weigh 35 to 40 pounds. See also **DOG** (color picture, Nonsporting Dogs).

JOSEPHINE Z. RINE

KEEWATIN, key WAH tin (pop. 2,413), is one of the three districts of Canada's Northwest Territories. It covers 228,160 square miles, 9,700 of which are inland water. Keewatin lies east of the Mackenzie District, and includes all of Hudson and James bays. A nickel mine began operations at Rankin Inlet in 1957, and geologists believe Keewatin has many other mineral deposits. It became a district in 1876. See **NORTHWEST TERRITORIES** (Districts).

ROBERT A. J. PHILLIPS

KEEWATIN PERIOD. See **GEOLOGY** (table, Outline of Earth History).

KEFAUVER, KEE FAW ver, ESTES (1903-), won recognition in 1950 as head of the United States Senate committee for investigating organized crime. Kefauver was the Democratic candidate for Vice-President in 1956.

Kefauver was born in Madisonville, Tenn. He studied at the University of Tennessee and Yale University. He practiced law, and won a seat in the U.S. House of Representatives in 1939. He served in the House until he was elected to the Senate in 1948. He was re-elected in 1954 and 1960. He unsuccessfully sought the Democratic nomination for President in 1952. In 1956, he campaigned for the nomination, but withdrew to support Adlai E. Stevenson.

RICHARD L. WATSON, JR.

KEGLERS. See **BOWLING** (History).

KEITEL, KYE tel, WILHELM (1882-1946), served as chief of the German supreme command in World War II. He signed the armistice between Germany and France in 1940, and signed Germany's surrender to the Allies in Berlin on May 9, 1945. From the time he became head of the German armed forces in 1938 to the end of the war, he tried to carry out to the letter the military aspects of Adolf Hitler's aggressions. Keitel was tried for war crimes and executed at Nuremberg. He was born at Helmscherode.

LESTER B. MASON

KEITH, SIR ARTHUR (1866-1955), was a British anatomist and anthropologist. His major work consisted of the interpretation of the various fossil remains of early man, and their bearing on the evolution of mankind. Among his writings in anthropology are *The Antiquity of Man* (enlarged edition, 1925), *Concerning Man's Origin* (1927), *Essays on Human Evolution* (1946), and *A New Theory of Evolution* (1948). Keith was born in Aberdeen, Scotland. He studied at the University of Aberdeen, at University College in London, and at the University of Leipzig.

DAVID B. STOUT

KEITH, HAROLD VERNE (1903-), an American writer, won fame for his historical and sports stories for boys. He received the Newbery medal in 1958 for *Rifles for Watie*, a story of the western campaign in the Civil War. He also wrote *Boy's Life of Will Rogers* (1937), *Oklahoma Kickoff* (1948), *Shotgun Shaw* (1949), and *A Pair of Captains* (1951). Keith was born in Lambert, Okla. He was graduated from the University of Oklahoma, where he became sports-publicity director in 1930.

JEAN THOMSON

KEKULE VON STRADONITZ, KAT *koo lay fohn SHTRAH doh nits*, **FRIEDRICH AUGUST** (1829-1896), was a German chemist and professor. He was the first to develop the idea that the forces coming from the atom, or *valences*, are distributed geometrically, like the points of a tetrahedron. He also recognized that where several carbons occur together in a compound, they are joined to each other.

These theories enabled Kekule to propose a molecular structure for benzene which is still used. He is generally considered to be the originator of the structure theory of organic chemistry, and has been called "an intuitive genius." Kekule was born in Darmstadt, Germany, on Sept. 7, 1829.

K. L. KAUFMAN

See also BENZENE; VALENCE.

KELLER, GOTTFRIED (1819-1890), a beloved Swiss writer, deeply reflected the land and the spirit of his people, the German-speaking Swiss. His lyrical poetry is warm, ardent, and often humorous. One of his poems, "O My Homeland," became an unofficial Swiss national anthem.

Keller is best known as a prose writer. He excelled both in the historical tales of *Zurich Novelettes* (1878) and in the rustic stories of *The People from Seldwyla* (1856, 1874). Among the latter are the tales "A Village Romeo and Juliet," sometimes called the finest rustic novelette in the German language; and "Mrs. Regel Amrain and Her Youngest Son," a lesson in democracy and civic responsibility.

Keller's *Seven Legends* (1872) are warmhearted and tolerant in their interpretation of religion. Of these, "The Virgin and the Nun" is especially appealing. His autobiographical novel *Green Henry* appeared in 1854. Keller was born in Zurich.

WERNER P. FRIEDERICH



Bettmann Archive

Helen Keller, left, "listened" to others speak by putting her middle finger on the speaker's nose, forefinger on the lips, and thumb on the larynx. With her teacher, Anne Sullivan, center, she demonstrated the method for the American actor Joseph Jefferson.

KELLER, HELEN ADAMS (1880-), is an outstanding example of a person who conquered physical handicaps. A serious illness, which was diagnosed as brain fever, destroyed her sight and hearing before she was two years old. Because of this, she was unable to speak, and was entirely shut off from the world. But she rose above her disabilities to become internationally famous and to help thousands of handicapped persons to live fuller lives.

For almost five years she grew up, as she later said, "wild and unruly, giggling and chuckling to express pleasure; kicking, scratching, uttering the choked screams of the deaf-mute to indicate the opposite." Then Helen's father took her to Dr. Alexander Graham Bell. He advised Keller to write to the Perkins Institution for the Blind in Boston. Shortly before the child was seven, Anne Sullivan (1866-1936) arrived from Boston to teach her. Miss Sullivan later married John A. Macy, but she remained with Helen Keller until her death. Then Mary Agnes "Polly" Thomson (1885-1960), who had been Miss Keller's secretary, took her place.

She Learns to Write. Anne Sullivan was able to make contact with the girl's mind through the sense of touch. She worked out a sort of alphabet by which she spelled out words on Helen's hand. Gradually, the child was able to connect words with objects. Once she understood, her progress was rapid. Within three years she knew the alphabet, and could read and write in Braille. A special typewriter was made for her on which she did all her writing.

She Learns to Speak. Until she was 10 years old, Helen Keller could talk only with the sign language of



Wide World

Helen Keller overcame blindness and deafness by learning to read and write in Braille. She won fame as an author and lecturer.

the deaf-mute. She decided she would learn to speak, and took lessons from a teacher of the deaf. By the time she was 16, she could speak well enough to go to preparatory school and to college. She chose Radcliffe, from which she was graduated in 1904 with honors. Anne Sullivan stayed with her through these years, interpreting lectures and class discussions to her.

She Helps Others. After college, Helen Keller became concerned with the conditions of the blind and the deaf-blind. She became active on the staffs of the American Foundation for the Blind and of the American Foundation for Overseas Blind. She appeared before legislatures, gave lectures, and wrote books and articles. She started the Helen Keller Endowment Fund of \$2,000,000, and asked for funds from wealthy men. In 1932, the Pictorial Review Company gave her its \$5,000 Achievement Prize for her work.

In later years, she became especially interested in bettering conditions for the blind in underdeveloped and war-ravaged countries. An enthusiastic and untiring traveler, she lectured in their behalf in more than 25 countries on the five major continents. During World War II, she worked with soldiers who had been blinded in the war. Wherever she appeared, she brought new courage to millions of blind people. Helen Keller has received awards of great distinction, such as the Chevalier's ribbon of the French Legion of Honor, the Alumni Achievement Award of Radcliffe College, and decorations from governments all over the world.

Her books have been translated into more than 50 languages. They include *The Story of My Life* (1903); *Optimism* (1903); *The World I Live In* (1908); *The Song of the Stone Wall* (1910); *Out of the Dark* (1913); *My*

Religion (1929); and *Midstream: My Later Life* (1930). *Teacher* (1955) tells of Anne Sullivan Macy. The motion picture, *Helen Keller in Her Story*, told the story of her life. Helen Keller was born in Tuscumbia, Ala., on June 27, 1880.

M. ROBERT BARNETT

KELLEY, OAKLEY G. See AIRPLANE (tables, Endurance Records; Nonstop Distance Records Without Refueling).

KELLEY, OLIVER HUDSON. See GRANGE, NATIONAL. **KELLEYS ISLAND.** See OHIO (Interesting Places to Visit).

KELLOGG, Ida. (pop. 5,061; alt. 2,305 ft.), lies in the scenic Coeur d'Alene mountain range of northern Idaho (see IDAHO [map]). The mining and lumber industries built Kellogg. The famous Bunker Hill and Sullivan mine, one of the world's largest and richest deposits of silver-lead-zinc ores, lies nearby. Noah S. Kellogg, a prospector, discovered the mine in 1885. The mine also yields gold and copper. The area around Kellogg has produced more than \$1,000,000,000 worth of mineral ores. It has more than nine tenths of Idaho's lead, silver, and zinc. The nearby Sunshine Mine is the world's largest single-lode producer of silver. Kellogg's lumber industry has not been important since a forest fire in 1910 burned about 1,900,000 acres of timber. Kellogg has a mayor-council type of government.

WILLIAM S. GREEVER and JANET GROFF GREEVER

KELLOGG, FRANK BILLINGS (1856-1937), was an American lawyer, diplomat, and statesman. He won the 1929 Nobel peace prize for his work in framing the Kellogg-Briand Peace Treaty of 1928. In 1930, he was appointed a judge of the Permanent Court of International Justice.

Kellogg was born in Potsdam, N.Y. He never went to school, but read law and was admitted to the bar in 1877. He achieved a reputation as a prosecutor of business trusts, especially of the oil, railroad, and paper monopolies. He served as a Republican U.S. Senator from Minnesota from 1917 to 1923, and as Ambassador to Great Britain in 1924 and 1925. Kellogg was Secretary of State from 1925 to 1929.

GEORGE M. WALLER

See also KELLOGG PEACE PACT; INTERNATIONAL COURT OF JUSTICE.

KELLOGG, WILL KEITH (1860-1951), an American cereal manufacturer, became known as "king of the corn flakes." He spent the first half of his life in obscurity. As head of a cereal company organized in 1906, he proved to be one of the master salesmen and merchandisers of his time, and made a large fortune.

Kellogg disliked being called a philanthropist, but he invested nearly all of his \$50,000,000 fortune in "helpful endeavors." He made substantial gifts to his birthplace, Battle Creek, Mich. In 1930, he established the Kellogg Foundation to promote child welfare, health, and education (see KELLOGG FOUNDATION, W. K.). As a hobby, Kellogg raised Arabian horses near Pomona, Calif.

ROBERT H. BREMNER

W. K. Kellogg

Brown Bros.



KELLOGG FOUNDATION, W. K., receives and administers funds for educational and charitable purposes. W. K. Kellogg, the cereal manufacturer, endowed the foundation in 1930 with \$47,000,000. Since then, he has given the corporation other gifts, and its current assets total more than \$180,000,000.

The foundation supports nonpartisan, nonprofit educational and health activities in the public interest. Its funds are used primarily to further the application of knowledge for the benefit of people and their communities. It has contributed to the national study of hospital facilities. The foundation's grants exceed \$5,000,000 a year in the fields of agriculture, dentistry, education, hospitals, medicine, nursing, and public health. It does not give grants to individuals, but offers them to universities and agencies which use the funds in their fellowship or scholarship programs. Most of the projects it sponsors are in the United States, but many are in Latin America, Canada, Europe, and Australia.

The foundation has headquarters at 250 Champion St., Battle Creek, Mich.

HORACE B. POWELL

KELLOGG PEACE PACT, or **KELLOGG-BRIAND PACT**, was an attempt to do away with war by agreement among nations. Fifteen countries, led by France and the United States, signed the pact in 1928. Later, it was ratified by most of the nations of the world. The signers declared that they condemned war as a way of settling quarrels. They also agreed to try to solve their disagreements by peaceful means. The pact was named for Frank B. Kellogg, United States Secretary of State, and Aristide Briand, French foreign minister.

The Signing of the Pact. After World War I, the United States refused to join other nations in the League of Nations and the World Court. But in 1922, Senator William E. Borah offered a resolution in the Senate urging that a treaty to outlaw war be negotiated with all nations. On April 6, 1927, 10 years after the day the United States entered World War I, Aristide Briand of France offered a suggestion. He proposed that France and the United States sign a treaty renouncing war in their relations with each other. Secretary of State Kellogg suggested that the treaty include other nations.

The Kellogg Peace Pact was signed at Paris on Aug. 27, 1928. Among the first 15 signers were Great Britain, Germany, Italy, Japan, Belgium, Czechoslovakia, and Poland. Later, 49 other countries agreed to the terms of the Pact. During the negotiations, many notes were exchanged. These notes made it clear that the signers kept their right to defend themselves against aggression, and to use force, if necessary, to carry out the provisions of the Covenant of the League of Nations.

Usefulness of the Pact. The Pact was hailed as a great achievement. But it proved almost completely useless in preventing war. It did not provide means of enforcement or ways for nations to work together.

The United States invoked the Pact when Japan invaded Manchuria in 1931, and when Italy attacked Ethiopia in 1935. Both Japan and Italy refused to recognize their obligations under the treaty. The United States was more successful in using the terms of the Pact to settle disputes between Bolivia and Paraguay and between Colombia and Peru in the 1930's. However, it became clear that such agreements as the Kellogg Peace Pact could not prevent wars.

DWIGHT E. LEE

KELLS, BOOK OF. See **BOOK OF KELLS**.

KELLY, COLIN (1915-1941), a captain in the United States Air Force, received the Distinguished Service Cross posthumously for heroism early in World War II. On Dec. 10, 1941, his B-17 bomber attacked a Japanese naval task force in the Philippines. The plane was hit and Kelly ordered his crew to bail out, but could not escape the crash himself. Kelly was born in Madison, Fla.

H. A. DEWEERD

KELLY, ERIC PHILBROOK (1884-1960), was an American author of books for young people. He became interested in Poland while doing relief work there after World War I. In 1925, he returned to teach and study at the University of Kraków, and wrote *The Trumpeter of Krakow* (1928). This book won the Newbery medal in 1929. Kelly was born in Amesbury, Mass., and lived in Denver, Colo., as a boy. He was graduated from Dartmouth College, where he later taught English and journalism.

EVELYN RAY SICKELS

KELLY, GEORGE (1887-), an American dramatist and actor, won a Pulitzer prize in 1926 for his play, *Craig's Wife* (1925). He also wrote *The Torchbearers* (1922), *The Show-Off* (1924), *Behold the Bridegroom* (1927), *Reflected Glory* (1936), and *The Deep Mrs. Sykes* (1945). Kelly was born in Philadelphia. He acted in juvenile parts, and then toured the country playing in vaudeville sketches he wrote.

GEORGE FREEDLEY

KELLY, GRACE PATRICIA (1929-), PRINCESS GRACE OF MONACO, was a well-known American actress before she married Prince Rainier III of Monaco in 1956 (see **MONACO**). She made her Broadway debut in 1949, in August Strindberg's *The Father*. This led her to Hollywood in 1951 where she distinguished herself in roles of increasing importance. She played in *Rear Window* (1954), *Country Girl* (1954), and *The Swan* (1956). She was born in Philadelphia, and was educated in private schools. She later studied acting in New York City.

MARSTON BALGH

KELLY, "WALT," WALTER CRAWFORD. See **CARTOON** (Leading Cartoonists).

KELLY, WILLIAM. See **IRON AND STEEL** (Famous Men in Iron and Steel).

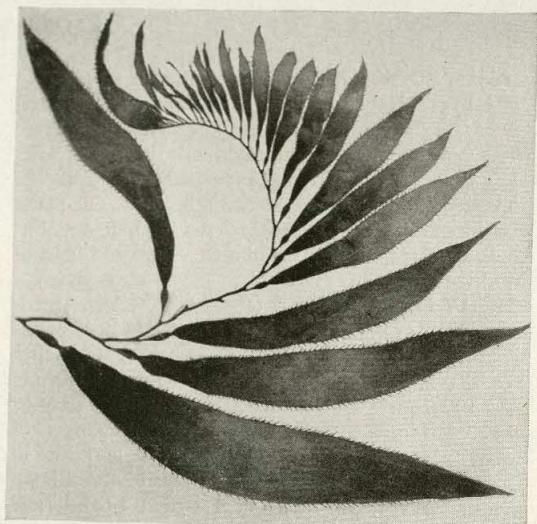
KELLY AIR FORCE BASE, Tex., houses the United States Air Force Security Service. It covers 3,937 acres, partially within the southwest city limits of San Antonio. The base is one of the world's largest air supply depots. It also serves as headquarters of the San Antonio Air Materiel Area. The army set up the post in 1911 as one of its first flying fields. In 1917, it named the field in honor of Lieutenant George E. M. Kelly, a flier who died in an airplane crash in San Antonio in 1911.

JOHN H. THOMPSON

KELMSCOTT PRESS. See **BOOK** (Improvements in Books); **MORRIS, WILLIAM**.

KELOID is a harmless swelling that usually occurs at the site of a cut. It may be of various sizes and shapes. Fibrous tissue in the underlayer of skin or in the connective tissue forms the keloid. Occasionally, injury causes keloids to form. But most often they occur after the skin is lacerated or after surgery. Usually they form directly in the cut itself. Keloids usually reappear, even after they are removed by surgery. Keloids are common in the Negro race.

LOUIS D. BOSHES



New York Botanical Garden

The Thin, Flat Leaves of Kelp contain large quantities of minerals. Iodine is produced from the ash of burned kelp.

KELP is an alkaline ash made by burning certain seaweeds, which also are called kelp. These weeds grow off the coasts of Ireland, Scotland, and Brittany. The ash is an important source of iodine. The amount of iodine obtained varies from 4 to 15 pounds to the ton. Kelp is about 20 to 25 per cent potassium chloride. It also contains common salt, sodium carbonate, sodium and potassium sulfates, and potassium or sodium iodide.

The crude alkali obtained from the ash was formerly used to make soap, but there are now cheaper processes to obtain alkalies for soaps. Partially dried kelp plants are used as fertilizer. The dried plants, ground fine, are sometimes used as a "body conditioner," because of their minerals and vitamins. Large masses of giant kelp grow in the waters off the Pacific coasts of North and South America.

See also **ALGAE**; **SEAWEED**.

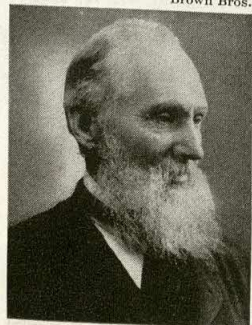
KELSEY, HENRY. See **MANITOBA** (Famous Manitobans).

KELTIC. See **CELT**.

KELVIN, LORD (1824-1907), **WILLIAM THOMSON**, was one of the great British physicists of the 1800's. He published 661 papers on a wide range of scientific subjects, and he patented 70 inventions. Queen Victoria knighted him for his work as the electrical engineer in charge of laying the first transatlantic cable in 1866 (see **CABLE**).

Lord Kelvin

Brown Bros.



Kelvin invented the mirror galvanometer used in cable signaling, and the siphon recorder, still used to receive the signals (see **GALVANOMETER**). He invented the first ship's compass that was largely free from the magnetic influence of iron on the ship. He also invented a mechanical

tide predictor that could foretell variations in sea level in any port.

Kelvin first suggested the use of the gas thermometer for accurate temperature readings. This thermometer scale, where absolute zero is equal to -273°C ., is called the Kelvin thermodynamic scale (see **ABSOLUTE ZERO**). Kelvin also tried to calculate the age of the earth, but the discovery of radioactivity showed that his basic assumptions were wrong.

He was born on June 26, 1824, in Belfast, Ireland. He was educated at the University of Glasgow and Cambridge University. He also went to the University of Paris to work in the laboratory of the noted scientist, Henri Regnault. He became professor of natural philosophy at the University of Glasgow in 1846. He remained there until he retired in 1899.

Kelvin received international recognition, and belonged to many scientific societies. In 1892, he received the title of Baron Kelvin of Largs. A gathering of noted scientists celebrated the jubilee anniversary of his professorship in 1896.

SIDNEY ROSEN

KEMAL ATATÜRK, *kuh MAHL AT uh turk* (1881-1938), founded the Republic of Turkey and served as its President from 1923 until his death. Amazing re-



OROC

Kemal Atatürk

forms in the Turkish political, social, economic, and religious life took place under his forceful and sometimes dictatorial leadership. He gave Turkish women their freedom and abolished such customs as the harem, the veil, and the fez. He outlawed polygamy. He eliminated corruption, improved public education, and introduced the Roman alphabet for the Turkish language. His government encouraged

the development of banks and new industries.

Kemal became famous for his role in defeating the British at Gallipoli during World War I. After the war, he fought the Allied plan to divide Turkey, and drove the Greeks from Asia Minor. By threatening to attack the British at Istanbul, he managed the abdication of the sultan and forced the British to negotiate the Treaty of Lausanne and to recognize Turkish independence (see **LAUSANNE, TREATY OF**; **TURKEY** [History]).

Kemal was born in Salonika, Greece. He was named *Mustafa*, but soon acquired the nickname *Kemal*, which means *perfection*. Later he was called *Ghazi Mustafa Kemal Pasha*. He became Kemal Atatürk, which means "Chief Turk," in 1933.

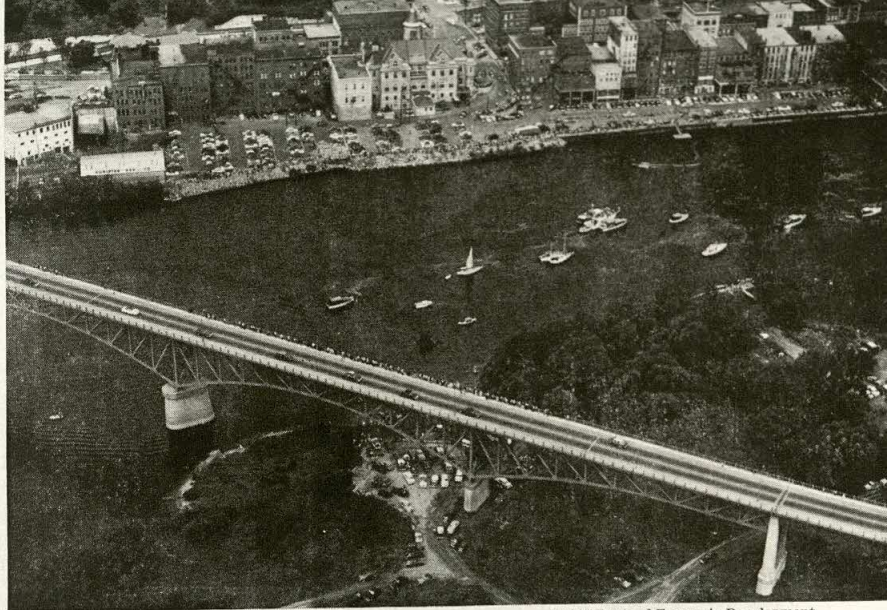
SYDNEY N. FISHER

KEMBLE, "FANNY," FRANCES ANNE (1809-1893), a British actress and author, made her stage debut as Juliet in London in 1829, playing opposite her father, Charles Kemble. She toured the United States with him, and later gave Shakespearean readings in both countries. Her books include *Francis the First*, a play she wrote at 17; and *Notes on Some of Shakespeare's Plays* (1882). She also wrote poems, and records of her girlhood, married life, and travels. Miss Kemble was born in London.

MARSTON BALGH

KEMPIS, THOMAS A. See **THOMAS A KEMPIS**.

Maine's Kennebec River flows through Augusta, the state capital. Forty miles beyond Augusta, the Kennebec enters the Atlantic Ocean.



Maine Dept. of Economic Development

KENDALL, AMOS (1789-1869), was an American political leader. He served as postmaster general under Presidents Andrew Jackson and Martin Van Buren. He made many improvements in the postal service, such as beginning the money-order system.

Kendall was born at Dunstable, Mass., and later moved to Kentucky. He became a newspaper editor, and was a strong supporter of Andrew Jackson. After Jackson became President, Kendall became one of the group of advisers called "The Kitchen Cabinet" (see **KITCHEN CABINET**). He made a fortune by investing in Samuel Morse's telegraph patents, and used much of it in philanthropy. He wrote *Life of Andrew Jackson* (1843).

W. B. HESSELTINE

KENDALL, EDWARD CALVIN (1886-), an American biochemist, won the 1950 Nobel prize in physiology and medicine, with Philip S. Hench and Tadeus Reichstein for his discovery of cortisone and his research on the hormones of the adrenal glands. He announced the isolation of cortisone, originally called *compound E*, in 1936, and first used it on humans in 1948 (see **CORTISONE**). He isolated *thyroxine*, the hormone of the thyroid gland, in 1914.

Kendall was born in South Norwalk, Conn. He was graduated from Columbia University with a B.S. degree in chemistry in 1908. He received a Ph.D. degree in 1910. He taught physiological chemistry at the Mayo Foundation from 1914 to 1951.

HENRY H. FERTIG

KENNA, JOHN EDWARD (1848-1893), was an American statesman. He served as a Democrat from West Virginia in the United States House of Representatives from 1877 to 1883, and in the U.S. Senate from 1883 until his death. He advocated railroad regulatory legislation and federal aid for navigation on the Kanawha River in West Virginia.

Kenna was born in St. Albans, W.Va. When he was 16, he joined General Joseph Shelby's brigade in the Confederate Army. He studied at St. Vincent's College in Wheeling, W.Va., and served as prosecuting attorney in Kanawha County before entering national politics. West Virginia placed his statue in the Capitol at Washington, D.C., in 1901.

ARTHUR A. EKIRCH, JR.

KENNAN, GEORGE FROST (1904-), an American diplomat, is credited with the policy of "containing Russia." He wrote *American Diplomacy: 1900-1950* (1951) and *Realities of American Foreign Policy* (1954). His *Russia Leaves the War* (1956) won the Pulitzer history prize in 1957. As ambassador to Russia in 1952, he protested his isolation in Moscow, and Russia demanded his dismissal. He was on the Policy Planning Staff of the U.S. Department of State in 1947. He became a permanent professor at the Institute for Advanced Study, Princeton, N.J., in 1956. In 1961, he was named ambassador to Yugoslavia. Kennan was born in Milwaukee, Wis.

HARVEY WISH

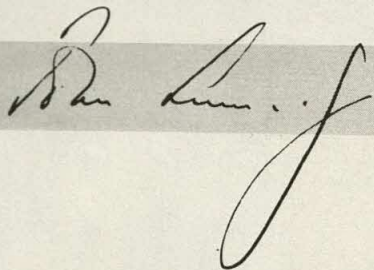
KENNEBEC RIVER, *KEHN uh beck*, is one of the chief waterways in Maine. The river rises in Moosehead Lake and flows south for 164 miles to empty into the Atlantic Ocean near Bath. For location, see **MAINE** (color map). The level of the river drops over 1,000 feet during its course. A series of waterfalls furnishes water power to the cities on the banks of the river. Augusta, the capital of Maine, lies on the west bank of the Kennebec, about 40 miles from its mouth. Small boats use the river for most of its length. Large ships can sail up the river for about 12 miles. The first attempt at permanent English settlement in Maine was made at the mouth of the river in 1607. See also **AUGUSTA** (picture).

LOYAL DURAND, JR.

KENNECOTT COPPER CORPORATION is the world's largest producer of copper, and ranks among the 100 largest United States manufacturers (see **MANUFACTURING** [table, 100 Leading U.S. Manufacturers]). It produces over 550,000 tons of copper annually, and has assets of almost \$400,000,000. The company mines, smelts, and refines copper, chiefly in Arizona, Nevada, New Mexico, and Utah. It also owns mines and refineries in Chile. Kennecott Copper operates several plants for fabricating copper into sheets, bars, tubes, wire, and cable. It also operates an iron-titanium mine in Quebec. The company was incorporated in 1915, and has 26 subsidiaries. Company headquarters are in New York City.

KENNEDY, EDMUND B. See **EXPLORATION AND DISCOVERY** (table, Famous Explorers).

JOHN F. KENNEDY



TRUMAN
33rd President
1945 — 1953



EISENHOWER
34th President
1953 — 1961

KENNEDY, JOHN FITZGERALD (1917-), won the presidency after a unique series of television debates with his opponent, Vice-President Richard M. Nixon. These “great debates” marked the first time in American history that presidential candidates argued campaign issues face to face.

At 43, Kennedy was the youngest man ever elected President. He succeeded the oldest President in history, 70-year-old Dwight D. Eisenhower. Kennedy, a Democrat from Massachusetts, was the first President of the Roman Catholic faith. He also was the first President born in the 1900’s. He became the second man to be elected President directly from the U.S. Senate. Warren G. Harding was the first.

In his inaugural address, President Kennedy declared that “a new generation of Americans” had taken over leadership of the country. He said Americans would “. . . pay any price, bear any burden, meet any hardship, support any friend, oppose any foe to assure the survival and the success of liberty.” He told Americans: “Ask not what your country can do for you—ask what you can do for your country.”

Early Life

Family Background. John Fitzgerald Kennedy was the second son of Joseph Patrick Kennedy (1888-) and Rose Fitzgerald Kennedy (1890-). The President’s ancestors were Irish farmers of Wexford County in southeastern Ireland. His great-grandfather, Patrick Kennedy, left Ireland during the great potato famine of the 1840’s and settled in Boston. The President’s grandfather, Patrick J. Kennedy, was a saloon owner who became a state senator and the political “boss” of a ward in Boston.

The President’s mother also came from a political family. Her father was John F. (“Honey Fitz”) Fitzgerald, a colorful politician. Fitzgerald served in the state senate and the U.S. House of Representatives. He was also mayor of Boston for three terms.

Joseph P. Kennedy, the President’s father, was a self-made millionaire. During the administration of President Franklin D. Roosevelt, he served as U.S. ambassador to Great Britain from 1937 to 1940. He resigned as ambassador because he believed Roosevelt’s policy of aid to Great Britain would lead the United States into World War II. Kennedy did not believe America should get involved in a European war.

Boyhood. President Kennedy was born on May 29, 1917, in Brookline, Mass., a suburb of Boston. The other eight Kennedy children were Joseph, Jr., (1915-1944), who was killed in World War II; Rosemary (1918-); Kathleen (1920-1948); Eunice (1921-);

Patricia (1924-); Robert F. (1925-), who became Attorney General in his brother’s Cabinet; Jean (1928-); and Edward F. (1932-), known as “Ted.”

The Kennedys moved often, to bigger homes and better neighborhoods, as the family grew and as Joseph Kennedy became wealthier. From Brookline, they moved to Riverdale, N.Y., then to Bronxville, N.Y. Joseph Kennedy moved his family to these New York City suburbs so he could be nearer his business activities.

As the Kennedy children grew up, their parents encouraged them to develop their own talents and interests. Loyalty to each other was important to the Kennedys. But the brothers and sisters also developed a strong competitive spirit among themselves. Jack, as his family called him, and Joe, his older brother, were especially strong rivals. Joe was charming, sociable, and domineering. Jack was quiet and often shy, but he held his own in fights with his older brother.

The Kennedys spent summers and vacations at their homes in Hyannis Port, Mass., and Palm Beach, Fla. Jack became skillful in sailing and swimming. The girls often joined with the boys in competitive games. The family favorite was touch football, which the Kennedys played even as adults.

Education. John Kennedy attended elementary schools in Brookline and Riverdale. In 1930, when he was 13 years old, his father sent him to the Canterbury School in New Milford, Conn. The next year, he transferred to Choate Academy in Wallingford, Conn. Kennedy was graduated from Choate in 1935 at the age of 18. His classmates voted him “most likely to succeed.”

Kennedy spent the summer of 1935 in England. He studied at the London School of Economics under Harold J. Laski (see LASKI, HAROLD JOSEPH). Kennedy enrolled at Princeton University that fall, but he developed jaundice and dropped out of school after Christmas. He entered Harvard University in 1936. There he majored in government and international relations.

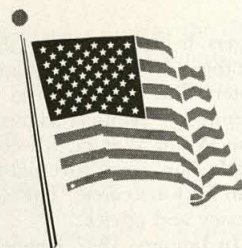
In 1939, Kennedy spent the spring and summer in Europe. Traveling from country to country, he interviewed politicians and statesmen. He sent his father detailed reports on their views of the crisis that soon led to World War II in September, 1939. Back at Harvard, Kennedy wrote his senior thesis about the events that resulted in war. He tried to explain why Great Britain had not been ready for war with Nazi Germany. Kennedy’s thesis was published under the title *Why England Slept*, and became a best-selling book.

Kennedy was graduated *cum laude* in 1940. He then enrolled in the Stanford University graduate business



Official color photograph by Alfred Eisenstaedt, *Life*

35TH PRESIDENT OF THE UNITED STATES



The United States flag had 50 stars when John F. Kennedy became the nation's President.

school. But he dropped out six months later because he disliked the work. After taking a trip through South America, Kennedy enlisted as a seaman in the United States Navy.

War Hero. For a few months, Kennedy was stationed in Washington, D.C. He applied for sea duty following the Japanese attack on Pearl Harbor on Dec. 7, 1941. Kennedy was assigned to a PT boat squadron late in 1942. After learning to command one of the small craft, he was commissioned as an ensign.

Kennedy's PT boat was assigned to patrol duty off the Solomon Islands in the South Pacific. Shortly after midnight on Aug. 2, 1943, a Japanese destroyer cut his boat in two. Two of the crew were killed. Kennedy and the other 10 men clung all night to the wreckage of their boat. The next morning, Kennedy ordered his men to swim to a nearby island. Despite an injured back, he spent five hours towing one of the disabled crewmen to shore. Kennedy spent most of the next four days in the water, searching for help. On the fifth day, he persuaded friendly natives on Cross Island to go for help. Kennedy's crew was rescued on August 7. For his heroism and leadership, Kennedy received the Navy and Marine Corps Medal in addition to the Purple Heart.

In December, 1943, the navy returned Lieutenant

Kennedy to the United States. He was suffering from malaria and his injured back gave him great pain. After recovering, Kennedy spent the rest of his naval service as an instructor and in various military hospitals. He then had a short career as a reporter for the Hearst newspapers. In 1945, Kennedy covered the founding of the United Nations in San Francisco and the British parliamentary elections.

Career in Congress

The Kennedys had thought Jack would become a writer or a teacher. His brother Joe was going to be the family politician. But Joe's death in 1944 changed Jack's future. Later, as a U.S. Senator, Kennedy said: "Just as I went into politics because Joe died, if anything happens to me tomorrow, my brother Bobby would run for my seat in the Senate. And if Bobby died, Teddy would take over for him."

U.S. Representative. Kennedy began his political career in 1946. He ran for the U.S. House of Representatives. He opposed eight others for nomination in the solidly Democratic 11th Congressional District of Massachusetts. He won the nomination and went on to easily defeat his Republican opponent.

The 1946 campaign set a pattern that played a major part in Kennedy's political success. His brothers and



Lenscraft Photos, Inc.

Kennedy's Birthplace was this three-story frame house in Brookline, Mass., a Boston suburb. The house still stands.

EARLY YEARS

At the Age of 10, Jack Kennedy played football while going to Dexter School in Brookline. Although never a star athlete, Kennedy enjoyed competing in sports even after he started his political career.



United Press Int.

sisters helped him win the nomination. So did his mother. The women organized teas in the homes of voters. But his father did not take an active part in Kennedy's political campaigns. His isolationism before World War II, his conservatism, and his wealth made him a controversial figure. He feared he would hurt his son's career. The elder Kennedy did contribute money and advice.

In January, 1947, Kennedy took his seat in Congress

IMPORTANT DATES IN KENNEDY'S LIFE

- 1917** (May 29) Born in Brookline, Mass.
- 1940** Graduated from Harvard University.
- 1941-1945** Served in the U.S. Navy during World War II.
- 1946** Elected to the U.S. House of Representatives.
- 1952** Elected to the U.S. Senate.
- 1953** (Sept. 12) Married Jacqueline Lee Bouvier.
- 1960** Elected President of the United States.
- 1961** (May 31-June 5) Visited Europe to confer with Allied leaders and Russian Premier Khrushchev.

At 29, the boyish looking Congressman was sometimes mistaken for a page boy. Kennedy voted for most of the social welfare programs of President Harry S. Truman. These programs included raising the minimum wage, expanding social security, and increasing aid to veterans and the aged. Kennedy was especially outspoken during debate on the Taft-Hartley Act, which he opposed as being too anti-labor. Kennedy was re-elected as a Representative in 1948 and 1950.

Campaign for the Senate. In April, 1952, Kennedy announced that he would oppose Republican Senator Henry Cabot Lodge, Jr. Lodge, a popular and experienced legislator, seemed almost certain to win re-election to the Senate.

Kennedy's brothers and sisters, their wives and husbands, and his mother joined him in the campaign. They made speeches, telephoned thousands of Massachusetts voters, invited thousands to teas, and shook hands with thousands more. Dwight D. Eisenhower, the Republican presidential candidate, carried Massachusetts by 209,000 votes in the 1952 election. But Kennedy upset Lodge by 70,000 votes.

Kennedy's Family. In 1951, Kennedy met his future wife at a dinner party in Washington, D.C. Jacqueline "Jackie" Lee Bouvier (July 28, 1929-) was the daughter of a wealthy Wall Street broker, John V. Bouvier III. She had attended Vassar College and the

Sorbonne in Paris. When she met Kennedy, she was a student at George Washington University in Washington. Later, she worked as an inquiring photographer for the *Washington Times-Herald*. She and Kennedy were married on Sept. 12, 1953. Their daughter Caroline was born on Nov. 27, 1957. Their son John F., Jr., was born on Nov. 25, 1960.

Senator Kennedy concentrated at first on helping Massachusetts and New England. He sponsored bills to help local industries, such as fishing, textile manufacturing, and watchmaking. Kennedy served on the Senate Labor Committee and the Government Operations Committee. Robert Kennedy, his younger brother, joined the Government Operations Committee as an assistant counsel. Senator Joseph R. McCarthy of Wisconsin was chairman of the committee.

At the time, McCarthy was the most controversial figure in American politics. Many persons praised him for his attacks on communist influence in government. Others criticized McCarthy because they felt he had violated the civil liberties of persons investigated by his committee. Kennedy approved of McCarthy's aims. But he felt that McCarthy often abused his power and was endangering the honor of the Senate. Kennedy was ill when the Senate censured McCarthy in 1954. He said later that he would have voted for the censure action.

During his first Senate term, Kennedy's back caused him severe pain. In October, 1954, and in February, 1955, he underwent operations to correct the injury.

CAREER IN POLITICS

Kennedy's First Political Campaign came in 1946 when he won a seat in the U.S. House of Representatives. He voted in the primary election accompanied by his grandmother and his grandfather, John F. ("Honey Fitz") Fitzgerald, a former Boston mayor.

Wide World





Wide World

As a Harvard Swimmer, Kennedy won a letter for the backstroke. He also won letters while playing on the Harvard football and golf teams.



Pictorial Parade

Author of a Best Seller. Kennedy's book *Why England Slept* became popular in 1940. He originally wrote it as his senior thesis at Harvard.



War Hero Kennedy won the Navy and Marine Corps Medal as skipper of a PT boat during World War II. He led his crew to safety after a Japanese destroyer sliced their boat in two.

While recovering, Kennedy wrote a book about some of the brave deeds performed by U.S. Senators. The book, *Profiles in Courage*, became a best seller and won a Pulitzer prize for biography.

In 1957, Kennedy was appointed to the Senate Foreign Relations Committee, a key assignment in Congress. He criticized the foreign policy of the Republican administration, and supported a program of increased aid to underdeveloped countries.

Kennedy also worked for moderate legislation to end alleged corruption in labor unions. He was a member of the Senate Labor Rackets Committee, which was investigating the union movement. His brother Robert was counsel for the committee. The Kennedys and other committee members engaged in dramatic arguments with controversial labor leaders, including James R. "Jimmy" Hoffa, of the teamsters' union.

Bid for the Vice-Presidency. In June, 1956, a movement to nominate Kennedy for Vice-President had gained strength among Democratic leaders. At the party's national convention in Chicago, Kennedy made the presidential nominating speech for former Governor Adlai E. Stevenson of Illinois. The delegates chose Stevenson to oppose Eisenhower for the second time. Kennedy worked furiously for the vice-presidential nomination. But he lost to Senator Estes Kefauver of Tennessee after a nip-and-tuck battle.

Election as President

Steps to the White House. Kennedy began working

for the 1960 presidential nomination right after the 1956 convention. He spent nearly every weekend campaigning. In 1958, Kennedy won re-election to the Senate by a majority of 874,000 votes.

Many Democratic leaders thought Kennedy had several disadvantages as a presidential candidate. His main drawback was his religion. Alfred E. Smith, the only Roman Catholic ever nominated for President by a major political party, had been badly defeated in 1928. Other possible shortcomings included Kennedy's youth, his family wealth, and his relative inexperience in international affairs. Some Democrats opposed Kennedy because they thought he was too conservative, and because he had never taken an active stand against Senator McCarthy.

Kennedy decided that the key to the presidential nomination would be to win as many state primary elections as he could. He believed that victories in the primaries would prove he could win the presidency. Kennedy entered primary contests in seven states, and won all of them.

At the Democratic national convention, Kennedy's chief opponents for the presidential nomination were Senator Lyndon B. Johnson of Texas, Senator Stuart Symington of Missouri, and Stevenson. Kennedy won on the first ballot. The delegates nominated Johnson for Vice-President.

The Republicans chose Vice-President Richard M. Nixon to oppose Kennedy for the presidency. Kennedy's old opponent, Henry Cabot Lodge, Jr., then

U.S. News & World Report



Senator Kennedy served on a committee that investigated charges of corruption in labor unions. His brother, Robert F., seated left, won nationwide fame as the committee's hard-hitting counsel. Later, President Kennedy appointed "Bobby" as U.S. Attorney General.

"I Do Solemnly Swear."

Kennedy took the oath of office as President of the United States from Chief Justice Earl Warren on Jan. 20, 1961. Vice-President Lyndon B. Johnson stands behind Kennedy.

Wide World

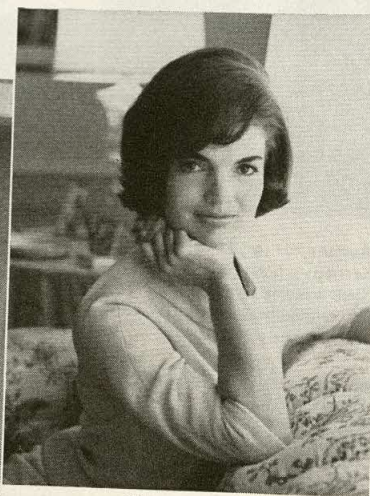


KENNEDY IN THE WHITE HOUSE



Paul Schutzer, LIFE. © 1961 Time Inc.

Caroline Kennedy and Her Father enjoy a walk along a White House gallery. The President's playful 3-year-old daughter became a national favorite.



Official photograph of Mrs. John F. Kennedy, by Mark Shaw



"Jackie" Kennedy brought style and grace to the Executive Mansion. She was only 31 when she became First Lady.

parts of the world. Cuba, only 90 miles from Florida, had come under communist rule. Many Americans feared that Russia led the United States in Space Age progress. This fear increased on April 12, when a Russian, Yuri A. Gagarin, circled the earth once in an artificial satellite. Less than a month later, the United

KENNEDY'S CABINET

Secretary of State	*Dean Rusk
Secretary of the Treasury	C. Douglas Dillon
Secretary of Defense	*Robert F. Kennedy
Attorney General	J. Edward Day
Postmaster General	Stewart L. Udall
Secretary of the Interior	Orville L. Freeman
Secretary of Agriculture	Luther H. Hodges
Secretary of Commerce	Arthur J. Goldberg
Secretary of Labor	†Abraham A. Ribicoff
Secretary of Health, Education, and Welfare	

*Has a separate biography in WORLD BOOK.
†See the article CONNECTICUT (Famous Connecticut Men and Women).

U.S. delegate to the UN, was Nixon's running mate. **The 1960 Campaign** was a hard-fought race. Both candidates were young, vigorous campaigners. At first, most experts believed Nixon would win. He had the advantage of being Vice-President under Eisenhower, an unusually popular President.

But Kennedy was not as unknown as some persons believed. His good looks, wealth, and attractive wife had made him a popular subject for articles in newspapers and magazines. Television also helped Kennedy greatly, especially during the four television debates with Nixon. Kennedy's self-assurance during the debates helped answer criticism that he lacked the maturity needed for the presidency.

Kennedy and Nixon did not disagree sharply on major domestic or foreign policies. Nixon ran chiefly on the record of the Eisenhower administration. Kennedy promised to lead Americans to a "New Frontier." He charged that, under the Republicans, the United States had lost ground to Russia in the Cold War.

Kennedy defeated Nixon by fewer than 120,000 popular votes. But he had a clear majority of electoral votes, 303 to 219. Senator Harry F. Byrd of Virginia received 15 electoral votes. For the electoral vote by states, see ELECTORAL COLLEGE (table).

Kennedy's Administration (1961-)

Kennedy became President on Jan. 20, 1961. Communist power and influence were still spreading to all

States sent Alan B. Shepard, Jr., a navy test pilot, on a short flight into space. On August 7, Major Gherman S. Titov of Russia circled the earth 17 times and landed safely from his spaceship. See SPACE TRAVEL.

Life in the White House. The Kennedys brought youth and informality to the White House. Caroline and John, Jr., were the youngest children of a President to live in the White House in more than 60 years. Caroline's antics and bright comments amused the nation. One Sunday, a White House reporter asked the 3-year-old tot what her father was doing. "He's not doing anything," she replied. "He's just sitting up there with his shoes and socks off, doing nothing."

Jacqueline Kennedy's stylish clothes and hairdo were copied by women in many countries. In 1961, she flew to Europe with her husband. Wherever she went, huge crowds gathered. President Kennedy presented himself to a Paris luncheon by saying: "I am the man who accompanied Jacqueline Kennedy to Paris . . ."

The National Scene. After a slow start, Congress began passing administration-sponsored measures. In April, 1961, the legislators approved aid to economically depressed areas. In May, Congress approved an increase in the minimum hourly wage from \$1 to \$1.25.



Wide World

President Kennedy Meets the Press at his first news conference as Chief Executive, on Jan. 25, 1961. It was the first presidential news conference to be televised "live" to a nationwide audience.

Kennedy Meets Khrushchev in Vienna, Austria. The June, 1961, conference marked the first talks between the President and the Russian premier.



Magnum

Civil rights continued to be a major issue. On May 20, 1961, a group of Negro and white "freedom riders" entered Montgomery, Ala., by bus to test local segregation laws. Rioting broke out, and Attorney General Robert F. Kennedy sent U.S. marshals to the city to help restore order.

Kennedy's popularity increased as he started his second year as President. He sent Congress several major pieces of legislation. He asked for lower tariffs to meet the challenge of the European Common Market, and asked \$3 billion for the Alliance for Progress, a 10-year Latin-American aid program. He also proposed a Department of Urban Affairs to represent city-dwellers, but Congress refused to create the department.

Foreign Policy. On March 1, 1961, President Kennedy signed an executive order establishing a Peace Corps. See **PEACE CORPS**.

On April 17, Cuban rebels invaded their homeland to overthrow Fidel Castro, the communist-supported dictator. The assault ended in disaster. President Kennedy accepted the blame for the ill-fated invasion, which had been planned by the United States.

Berlin was Kennedy's chief concern during his first year in office. Russia threatened to give communist East Germany control over the West's land and air supply routes to the city. The threat was part of a Soviet effort to end the combined American, British, French, and Russian control of Berlin, begun in 1945 when World War II ended. The western allies opposed any move that threatened the freedom of West Berlin.

In June, 1961, Kennedy discussed Berlin with Premier Nikita S. Khrushchev of Russia at a two-day meeting in Vienna, Austria. Nothing was settled, and the crisis deepened. Both countries increased their

military strength. In August, the Russians sealed the border between East Berlin and West Berlin. This prevented East Germans from fleeing to the West. On September 1, the Russians resumed testing atomic weapons after almost three years of an unofficial test ban. This forced the United States to test also. But the U.S. tests were underground, with no fallout.

In November, President Kennedy was interviewed by Aleksei I. Adzhubei, Khrushchev's son-in-law and editor of Russia's government newspaper, *Izvestia*. *Izvestia* published the President's statements in full, and millions of Russians read them.

On March 2, 1962, Kennedy announced that, in the absence of a test ban agreement, the U.S. would resume nuclear tests in the atmosphere in April.

ERIC SEVAREID

Related Articles in WORLD BOOK include:

Cuba (History)
Johnson, Lyndon B.
Peace Corps
President of the
United States
Nixon, Richard M.

Outline

- I. Early Life**
 - A. Family Background
 - B. Boyhood
 - C. Education
 - D. War Hero
- II. Career in Congress**
 - A. U.S. Representative
 - B. Campaign for the Senate
 - C. Kennedy's Family
 - D. Senator Kennedy
 - E. Bid for the Vice-Presidency
- III. Election as President**
 - A. Steps to the White House
 - B. The 1960 Campaign
- IV. Kennedy's Administration (1961-)**
 - A. Life in the White House
 - B. The National Scene
 - C. Foreign Policy

Questions

How did Kennedy win fame as a war hero?
How did his brother's death affect Kennedy's career?
What two best-selling books did Kennedy write?
What part did Kennedy's family play in his many political victories?
How did Kennedy and Nixon use television during the 1960 campaign?
How did White House life change under the Kennedys?
What is the Peace Corps?
How was Kennedy's Attorney General related to him?

KENNELLY-HEAVISIDE LAYER is the lowest layer of the ionosphere. See **IONOSPHERE**.

KENNEDY'S ELECTION

Place of Nominating Convention. Los Angeles
Ballot on Which Nominated. . . . 1st
Republican Opponent. . . . Richard M. Nixon
Electoral Vote. . . . 303 (Kennedy) to
219 (Nixon) and
15 (Byrd)
Popular Vote. . . . 34,227,096 (Kennedy) to
34,107,646 (Nixon)
Age at Inauguration. . . . 43

KENNY, ELIZABETH



Ewing Galloway

Elizabeth Kenny

KENNY, ELIZABETH (1886-1952), an Australian nurse, developed a special method of treating poliomyelitis (see **POLIOMYELITIS**). She became a nurse in the frontier, or "bush," country of Australia.

One day, an epidemic of poliomyelitis struck, and Miss Kenny could not get medical help. This led her to work out her own method of treating the victims. She found that prompt application of hot woolen

packs relieved muscle spasms and usually kept the patient from becoming crippled.

Sister Kenny, as she was called after she became a head nurse, served as a nurse in the Australian Army during World War I. In 1933, she set up her own clinic in Townsville (Queensland). Her treatment was accepted for use in Australian hospitals by 1939. She lectured and demonstrated the method in the United States in 1940, and secured funds to set up the Elizabeth Kenny Institute in Minneapolis, Minn.

Elizabeth Kenny was born on Sept. 20, 1886, in Warrialdra, New South Wales. She wrote many treatises dealing with polio, and an autobiography, *And They Shall Walk* (1943).

HELEN E. MARSHALL

KENOSHA, *kuh NO shuh*, Wis. (pop. 67,899; alt. 610 ft.), is a manufacturing center on the western shore of Lake Michigan. Kenosha lies about 8 miles north of the Wisconsin-Illinois boundary line. The city is about 35 miles south of Milwaukee, and about 55 miles north of Chicago. For location, see **WISCONSIN** (color map).

Kenosha has more than 70 manufacturing plants which produce about \$150,000,000 worth of goods each year. These plants make automobiles, trucks, metal beds, furniture, bed springs and mattresses, hosiery, underwear, fire trucks, wire, steel cables, rope, refrigerators, and leather goods.

The city is connected with other large western cities by railroads and steamboat and bus lines. Wide highways connect Kenosha with Milwaukee and Chicago. Kenosha also has an airport.

The first settlers came here in 1835 and founded a village called Pike Creek. The name was changed to Southport in 1837. The present name was chosen in 1850 when Kenosha was incorporated as a city. The first free public school system in the state was established here in 1849. This was partly due to the efforts of Michael Frank, an editor and educator, and Christopher Sholes, an inventor of the typewriter. Mayor-council government was adopted in 1958.

JAMES I. CLARK

KENSICO DAM stores water for the water-supply system of New York City. It is chiefly an emergency reservoir. The dam extends across the Bronx River about 20 miles north of New York City. It is a concrete gravity-type structure, standing 307 feet high, 233 feet thick at the base, and 1,843 feet long.

Kensico Dam can hold 93,908 acre-feet of water. A highway across the top of the dam leads to the *aeration*

or ventilation plant, which has 3,000 fountains. The dam was built in 1915 by the New York City Department of Water Supply.

T. W. MERMEL

See also **DAM**.

KENSINGTON RUNE STONE is a slab of stone bearing an inscription in Scandinavian runic letters (see **RUNE**).

Olof Ohman, a Swedish farmer, found the stone on his farm near Kensington, Minn., in 1898. The inscription tells of a party of Swedish and Norwegian vikings who set out from their settlements in *Vinland*, or America, on an exploration journey westward. The inscription is dated 1362, or 130 years before Columbus discovered America. Some scholars have regarded the stone as a forgery, while others have defended it as genuine. The rune stone is still a subject of controversy. It is in the possession of the Alexandria (Minn.) Chamber of Commerce. A replica appears on exhibit in the National Museum in Washington, D.C.

WILLIAM C. BARK

The Kensington Rune Stone is claimed to be the oldest record of American exploration. It tells of Vikings exploring America before the time of Columbus. The stone is 36 inches long, 15 inches wide, 5½ inches thick, and weighs 230 pounds.



Smithsonian Institution



Rockwell Kent

KENT, JAMES (1763-1847), was an American legal authority. As chancellor of the New York court of chancery, he increased the court's influence and adapted English equity law to cases tried before him (see Egurty). His *Commentaries on American Law* (1826-1830) had great influence on American legal practice.

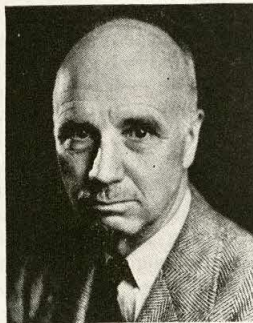
Kent was born in Fredericksburgh, N.Y. In 1793, he became a professor of law at Columbia College (now part of Columbia University). He was named a justice of the Supreme Court of New York in 1804, and served as chancellor from 1814 to 1823.

RICHARD N. CURRENT

KENT, ROCKWELL (1882-), is an American painter, illustrator, printmaker, and author. He found material for his books and many of his drawings on his travels to remote parts of the world. He won fame in 1920 with *Wilderness: A Journal of a Quiet Adventure in Alaska*. This book contained many of his pictures of Alaskan scenes. He next traveled to the southernmost tip of South America. He made the last part of his trip to Tierra del Fuego in a lifeboat. He wrote about this journey in *Voyaging: Southward from the Strait of Magellan* (1924). These books and *Salamina* (1935) and *N by E* (1936) established him as both a writer and an artist.

Kent adapted his style as an artist to the material he illustrated. His work showed consistently sure draftsmanship and a strong sense of design. His illustrated editions of books by other authors include *Moby Dick*, *Beowulf*, and *The Canterbury Tales*. Some of his works are in the collections at the Metropolitan Museum of

Rockwell Kent, right, wrote and illustrated books about the trips he took to many different parts of the world. The Drifter, above, shows the loneliness, spirit of adventure, and barren setting found in many of Kent's pictures.



NORMAN RICE

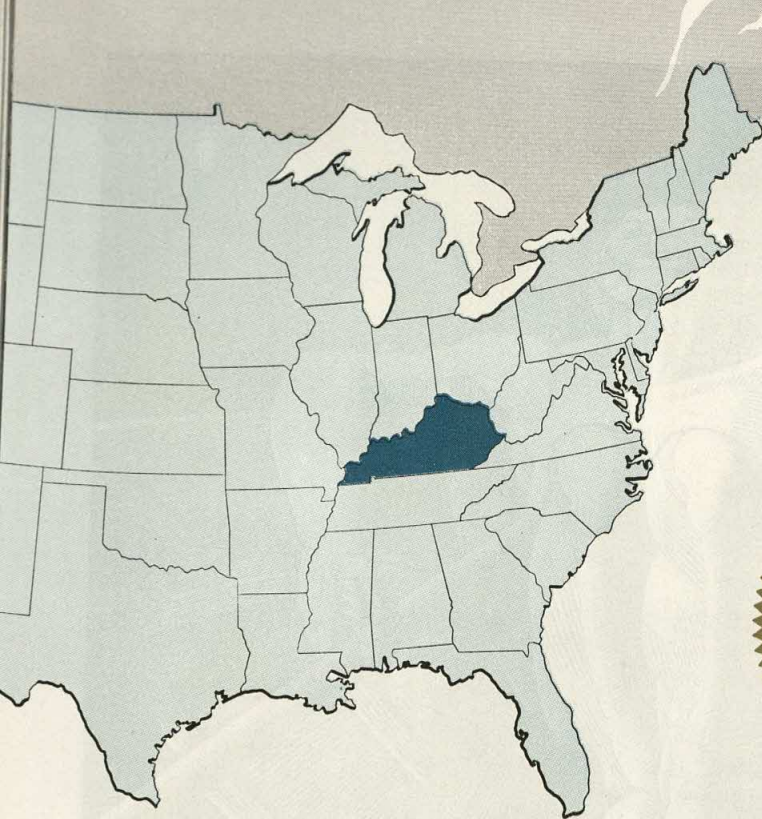
Art in New York City and the Art Institute of Chicago.

Kent was born in Tarrytown Heights, N.Y. He studied architecture at Columbia University, and studied painting with well-known American painters and teachers.

See also CANTERBURY TALES (picture); MELVILLE, HERMAN (picture).

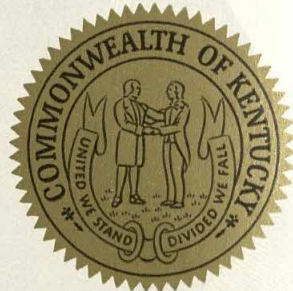
KENT STATE UNIVERSITY is a state-controlled educational school at Kent, Ohio. It has colleges of education, arts and sciences, business administration, and fine and professional arts; a graduate school; and schools of music, speech, and journalism. Courses lead to the bachelor's, master's, and doctor's degrees. Kent was founded in 1910. For enrollment, see UNIVERSITIES AND COLLEGES (table).

GEORGE A. BOWMAN



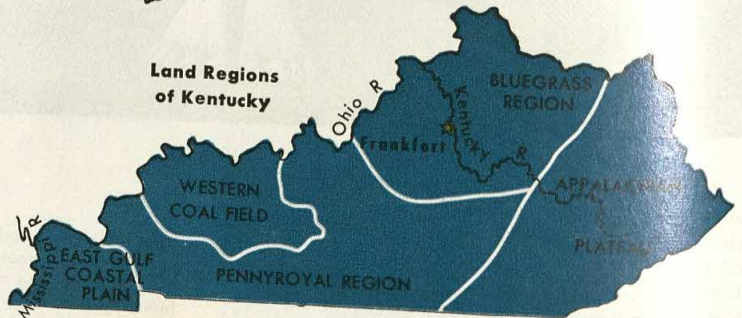
KENTUCKY

The Bluegrass State



The State Seal

Land Regions
of Kentucky



KENTUCKY, *kun TUCK ih*, a border state between the North and the South, has won fame throughout the world for its fine horses and tobacco. Since the first white men pushed through Cumberland Gap, Kentucky has been known as **THE BLUEGRASS STATE**, because of the dusty blue blossoms of the grass on its rolling meadows and pastures. Frankfort is the capital.

During Kentucky's early history, white men and Indians fought many battles in its forests and meadows. These battles helped give the state the nickname of **THE DARK AND BLOODY GROUND**. Hundreds of frontiersmen gave Kentucky a reputation for hardihood and courage. Daniel Boone and Simon Kenton blazed trails for settlers to enter this new land. Abraham Lincoln and Jefferson Davis, the opposing presidents in the Civil War, were born less than a hundred miles apart in Kentucky. Other famous Kentuckians include Henry Clay, the lawmaker and statesman; Kit Carson, the great Indian scout of the West; and two Vice-Presidents, Richard M. Johnson and Alben W. Barkley. President Zachary Taylor grew up in Kentucky.

Since the beginning of white settlement, agriculture has been the chief work of Kentuckians. Corn, hay, soybeans, wheat, and dark and burley tobacco rank as the leading crops. Kentucky farmers raise a tobacco crop second in size only to that of North Carolina. Kentucky raises twice as much burley tobacco as all the other

states combined. Bluegrass grows in much of Kentucky, but it thrives best in the rolling central area. Horses, cattle, and sheep graze on the grassy pastures. The state is the leading grower of grass seed. Bluegrass, orchard grass, and lespedeza from Kentucky grow on lawns, parks, and golf courses in many parts of the world.

Since the days of Daniel Boone, Kentuckians have bred horses for racing. Most of the important horse-breeding farms lie in the Bluegrass area around Lexington. Stone walls and white fences enclose paddocks, fields, stately homes, and large barns. Every May, thousands of racing fans watch the colorful Kentucky Derby, a famous horse race at Churchill Downs in Louisville, the state's largest city.

Nearly two thirds of Kentucky's people live on farms and in small towns. But the products of the state's mines, mills, and factories have three times the value of its farm products. Kentucky ranks third among the states in coal mining and in the making of cigarettes and cigars. Kentucky distilleries lead the nation in whisky production, producing two thirds of the na-

tional output. The United States Treasury stores the nation's gold reserve in underground vaults at Fort Knox. Thousands of visitors every year tour Kentucky's Mammoth Cave, with its 175 miles of passageways on five levels.

The state gets its name from the Kentucky River, whose name came from an unknown Indian source. Popular meanings have been given to the word, such as *The Meadowland* and *The Land of Tomorrow*. But historians have found no basis in fact for these translations. Daniel Boone called the state, "Cuntucke, the Great Meadow." For the relationship of Kentucky to other states in its region, see SOUTHERN STATES.

The Land and Its Resources

Location and Size. The Ohio River separates Kentucky from the northern states of Illinois, Indiana, and Ohio, as shown on the *Color Map*. West Virginia and Virginia lie to the east, Tennessee to the south, and Missouri to the west. Kentucky covers 40,395 square miles, ranking 37th in size among the states.

Land Regions. Kentucky has five major land regions: (1) the Appalachian Plateau, (2) the Bluegrass Region, (3) the Pennyroyal Region, (4) the Western Coal Field, and (5) the East Gulf Coastal Plain.

The Appalachian Plateau, the eastern part of the state, forms part of the Appalachian mountain and plateau system. Streams have cut the plateau section into a maze of narrow valleys between steep ridges. The Cumberland and Pine Mountain ranges form the southeastern boundary of the state. Between them lies the Middlesboro Basin, a series of open valleys separated by sharp ridges. The state's highest mountains rise east of this basin. Over hundreds of years, the flooding waters of larger streams have deposited sediments along their valleys and made them into fertile flood plains. There are wind gaps, such as Cumberland Gap, and water gaps, such as the Breaks of Sandy (see APPALACHIAN

FACTS IN BRIEF

Capital: Frankfort (since 1792).

Government: *Congress*—U.S. Senators, 2; Representatives, 8. *Electoral votes*, 10. *State Legislature*—senators, 38; representatives, 100. *Counties*, 120. *Voting Age*, 18 years.

Area: 40,395 square miles (including 532 square miles of inland water), 37th in size among the states. *Greatest length*, 458 miles. *Greatest width*, 175 miles.

Elevation: *Highest*, Black Mountain, 4,145 feet above sea level; *Lowest*, 237 feet above sea level, along the Mississippi River in Fulton County.

Population: 3,038,156 (1960), 22nd among the states. *Density*, 75 persons to the square mile. *Distribution*, rural, 55 per cent; urban, 45 per cent.

Chief Products: *Agriculture*, corn, hay, horses, seed grasses, tobacco. *Manufacturing and Processing*, chemicals and petrochemicals, food products, lumber and wood products, tobacco products, whisky. *Mining*, coal, clays, fluorite, natural gas, petroleum.

Statehood: June 1, 1792, the 15th state.

State Seal: The two men greeting each other symbolize brotherhood, as does the motto, "United We Stand, Divided We Fall." Around the edge are the words, "Commonwealth of Kentucky." Adopted in 1792.

State Flag: The words "Commonwealth of Kentucky" appear around the upper half of the seal, and a garland of goldenrod winds around the lower half. The state motto is on the seal. Adopted in 1918.

State Motto: United We Stand, Divided We Fall.

State Song: "My Old Kentucky Home." Words and music by Stephen Collins Foster.



The State Flag

The State Bird
Kentucky Cardinal



The State Flower
Goldenrod

The State Tree
Tulip Poplar



KENTUCKY (Map Index)

Population

3,038,156	1960
2,944,806	1950
2,845,627	1940

Physical Features

Abraham Lincoln Nat. Historical Park	C 5
Barren R.	C 4
Beaver Mtn.	C 6
Beech Creek	C 8
Beech Fork	C 8
Big Sandy R.	C 5
Black Mtn. (Highest Point in Kentucky)	D 8
Blaire Creek	B 8
Buck Creek	C 6
Caney Ridge	C 4
Carter Caves	C 4
Natural Bridge	B 7
Clarks R.	D 2
East Fork	D 2
West Fork	D 2
Cudlog Cave	D 7
Cumberland Gap	D 7
Cumberland Nat. Historical Park	D 7
Cumberland Mtn.	D 7
Cumberland Plateau	D 6
Cumberland R. D. 3	D 5
South Fork	D 6
Dale Hollow Lake	D 5
Dewey Dam	C 8
Dewey Reservoir	C 8
Dix Dam	C 6
Dix R.	C 6
Drake Creek	C 4
West Fork	D 4
Du Chien, Bayou	D 1
Eagle Creek	A 5
Fern Creek	A 5
Floyds Fork	B 5
Fork Knox Federal Depository	C 5
Frenchman Knob (Peak)	C 5
Green R.	C 5
Guists Creek	B 7
Gunpowder Creek	A 7
Harrods Creek	A 5
Herrington Lake	C 6
Jephtha Knob (Peak)	B 5
Johns Creek	C 8
Kentucky Dam	C 8
Kentucky Lake	B 2
Kentucky Ridge	D 7
Kentucky R.	B 6
Middle Fork	C 7
North Fork	C 7
South Fork	C 7
Knob Creek	C 7
Knobs (Mts.), The	C 5
Lake Cumberland	D 5
Lewis Fork	D 6
Lick Creek	A 8
Licking R.	B 7
North Fork	B 6
South Fork	B 6
Little R.	D 3
Madison, 33,482	C 6
Marion, 11,156	C 7
Lost River Cave	B 7
Mammoth Cave Nat. Park	C 4
Mayfield Creek	D 2
Mississippi R.	C 2
Mt. Olympus	B 7
Mud Lick Creek	A 7
Muddy Creek	A 7
Nolin R.	D 3
Obion Creek	C 4
Ohio R.	C 2
Peach Orchard Knob (Peak)	C 4
Pennyrival Plateau	D 4
Pine Mtn.	D 6
Pond Creek	A 4
Pond R.	C 3
West Fork	D 3
Poplar Mtn.	D 5
Pound Gap	C 8
Red Bird Creek	C 7
Red R.	C 7
Red R.	D 3
Rockcastle R.	C 5
Rolling Fork	C 5
North Fork	C 5
Rough R.	C 4
Russell Fork	C 8
Salt R.	C 5
Samuel Hill	C 4
Sinking Creek	C 4
Tennessee R.	C 2
Tug Fork	B 8
Tygart's Creek	B 7
White Rocks (Mtn.)	D 7
Wolf Creek Dam	A 5
Woolper Creek	A 7
Yellow Cliff (Mtn.)	D 6

Cities

Adair, 14,699	C 5
Allen, 12,269	D 4

Cities

Anderson, 8,618	C 5	Adairville, 848	D 4	Burlington, 350	A 6, A 7
Ballard, 8,291	C 1	Adams, 350	B 8	Burna, 300	C 2
Barren, 28,303	D 4	Adolphus, 300	D 2	Burns Springs, 350	C 2
Bath, 9,114	D 4	Ages, * 700	D 7	Burnside, 575	D 6
Bell, 35,336	D 7	Albany, 1,887	D 5	Burton, 504	C 8
Boone, 21,940	B 6	Alcorn, 100	C 6	Butler, 450	B 6, B 8
Bourbon, 18,178	B 6	Alexandria, 1,307	A 8, B 6	Cadiz, 1,980	D 3
Boyd, 52,163	B 8	Alford, 1,307	A 8, B 6	Cains Store, 250	C 6
Boyle, 21,257	C 6	Allegre, 60	D 3	Calhoun, 817	C 3
Bracken, 15,422	C 6	Allen, 370	C 8	California, 163	A 8
Breathitt, 15,490	C 5	Allensville, 286	D 3	Calvary, 300	C 5
Breckinridge, 14,734	C 4	Allock, * 100	C 7	Calvert City, 1,505	C 2
Bullitt, 15,726	C 5	Almo, 150	D 2	Cambridge, * 288	B 5
Butler, 9,586	C 4	Alva, 700	D 2	Campbellburg, 348	B 5
Butt, 13,073	C 3	Anchorage, 1,170	A 5	Campbellsville, 6,966	C 6
Calloway, 20,972	C 3	Anco, 396	C 7	Campton, 484	C 7
Campbell, 86,803	D 2	Annnville, 400	C 7	Canada, 900	C 8
Carlisle, 5,608	B 6	Arabia, 500	C 6	Candy, * 500	C 7
Carroll, 9,798	B 5	Arjay, 890	D 7	Cane Valley, 300	C 5
Carter, 20,817	B 7	Arlington, 584	D 1	Caney, 400	C 7
Casey, 14,327	C 5	Artemus, 950	D 7	Caneville, 278	C 4
Christian, 56,904	D 3	Ashbyburg, 150	C 3	Canmer, 500	C 7
Clark, 21,075	C 6	Ashland, 31,283	B 8	Cannel City, 300	C 7
Clark, 20,748	C 6	Athens, 225	C 6	Canoe, 500	C 7
Clinch, 8,886	D 5	Athertonville, 200	C 5	Canton, 350	D 3
Crittenden, 8,848	C 2	Attilla, 25	C 5	Cardinal, 150	D 7
Cumberland, 7,835	D 5	Auburn, 1,013	D 4	Carlisle, 1,601	B 6
Daviess, 70,588	C 3	Audubon Park, 1,867	A 5	Carrollton, 3,218	B 5
Edmonson, 8,085	C 4	Augusta, 1,458	B 6	Carsville, 166	C 2
Elbert, 6,330	B 7	Aurora, 400	D 2	Carter, 122	B 7
Estill, 12,466	C 6	Auxier, 649	C 8	Cassville, * 53	C 3
Fayette, 31,906	B 6	Bagdad, 500	B 5	Cattletown, 3,874	B 8
Fleming, 10,890	B 7	Balkan, 676	D 7	Cave City, 1,418	C 5
Floyd, 41,642	C 8	Bandana, 400	C 2	Cawood, 800	D 7
Franklin, 29,421	B 6	Barbourville, 3,211	D 7	Cayce, 175	D 1
Fulton, 11,256	D 1	Bardo, 250	D 7	Cecilia, 500	C 5
Gallatin, 3,867	C 6	Barstow, 4,798	C 5	Center, 115	C 5
Garrard, 9,747	C 6	Barstow Junction, 150	C 5	Centertown, 327	C 4
Grant, 9,489	B 6	Barstow, 1,067	D 5	Central City, 3,694	C 3
Graves, 30,021	D 2	Barlow, 731	C 1	Chapman, 206	D 3
Grayson, 15,834	C 4	Barnock, 189	C 8	Chapelhill, 300	D 4
Green, 11,249	C 5	Baskett, 300	C 8	Chaplin, 187	C 5
Greenup, 29,238	B 7	Baugham, 500	C 3	Chavies, 294	C 7
Hancock, 5,330	C 4	Baxter, 900	D 7	Cherrywood Village, * 531	B 5
Hardin, 51,107	C 4	Beals, 100	C 3	Christopher, * 250	C 7
Harrison, 13,704	B 6	Beattyville, 1,048	C 7	Cisco, 185	C 7
Hart, 14,119	C 5	Beaver, 300	C 8	Clarkson, 645	C 4
Henderson, 33,519	C 3	Beaverfield, 175	A 8, B 6	Clarksville, 20	A 8
Henry, 10,987	B 5	Bedford, 717	B 5	Clay, 1,343	C 3
Hickman, 6,747	D 1	Beech Creek, 750	C 3	Clay City, 764	C 7
Hopkins, 38,458	C 3	Beech Grove, 159	C 3	Clayhatch, 850	C 7
Jack, 10,677	C 6	Beechwood Village, * 1,903	B 5	Claymour, 35	D 3
Jefferson, 61,047	B 5	Belcher, 591	B 5	Cleaveland, 550	B 7
Jessamine, 13,625	C 6	Belfry, 950	C 8	Clermont, 100	C 5
Johnson, 19,748	C 8	Bellefont, 337	B 8	Clify, 100	D 3
Kenton, 120,700	B 6	Bellemeade, * 438	B 5	Clinton, 1,647	D 2
Knox, 25,238	C 7	Bellvue, 9,336	A 8	Clintonville, 250	B 6
Larue, 10,346	D 7	Benham, 1,874	D 8	Clio, 700	D 6
Laurel, 24,901	C 5	Benton, 3,074	D 8	Clospoint, 400	D 7
Lawrence, 12,134	B 8	Berna, 4,302	D 2	Clover Bottom, 190	C 6
Lee, 7,420	C 7	Bernstadt, 425	C 6	Cloverport, 1,334	C 4
Leslie, 10,941	C 7	Berry, 279	B 6	Coal Run, 250	C 3
Letcher, 30,102	C 8	Bethel, 200	B 7	Coalwood, * 800	D 7
Lewis, 13,115	C 6	Bethelridge, 150	B 7	Cold Spring, 1,095	A 8
Lincoln, 16,503	C 7	Betsy Layne, 912	C 8	Colesburg, 150	C 5
Livingston, 7,029	C 6	Belah, 100	C 3	College Hill, 700	C 6
Logan, 20,896	D 4	Beverly, 306	D 7	Colmar, 500	D 7
Lyon, 5,924	C 2	Big Clifty, 550	C 4	Columbia, 2,255	C 7
Madison, 33,482	C 6	Big Creek, 250	C 7	Columbia, 357	D 1
Magoffin, 11,156	C 6	Big Spring, 150	C 4	Combs, * 900	C 7
Marion, 16,887	C 5	Biobone, 50	C 8	Concord, 83	B 7
Marshall, 16,266	D 2	Birdsville, 92	A 7	Confluence, 175	C 7
Martin, 10,201	D 2	Black Bottom, * 300	D 7	Conkling, 400	C 7
Mason, 18,454	B 7	Blackfoot, 300	C 8	Copier, 250	D 6
McCracken, 57,306	C 2	Blackford, 175	C 3	Co-Operative, 350	D 6
McCreary, 12,463	D 6	Blaine, 124	C 3	Corbin, 719	D 6
Meade, 9,355	C 3	Bloomfield, 133	D 2	Corinth, 238	B 6
Meigs, 4,276	C 7	Bloomfield, 916	D 2	Cornishville, 250	C 6
Mercer, 14,596	C 6	Blue Diamond, 300	C 5	Corydon, 746	C 3
Metcalf, 9,367	D 6	Bluff City, 250	C 3	Covington, 60,376	A 6, A 8
Monroe, 11,799	D 5	Bond, 600	C 3	Cow Creek, 320	C 7
Montgomery, 13,461	B 7	Bonnieville, 376	C 6	Coxton, 950	D 7
Morgan, 11,056	C 7	Booneville, 143	C 7	Crab Orchard, 808	C 6
Muhlenberg, 27,791	C 3	Boston, 500	C 3	Crescent Park, 564	A 6
Nelson, 22,168	C 5	Bowling Green, 29,338	C 5	Crescent Springs, 946	A 8
Nicholas, 6,677	B 6	Boyce, 250	D 4	Crestview, * 616	A 6
Ohio, 17,725	C 3	Boydsville, 80	D 2	Crestwood, 600	A 5, B 5
Oldham, 13,388	B 5	Bradfordville, 387	C 5	Crittenden, 287	B 6, B 8
Owsley, 6,237	B 6	Brandenburg, 1,542	C 4	Crockettsville, 50	C 7
Owsley, 5,369	C 7	Bremen, 328	C 4	Cromer, 892	C 3
Pendleton, 9,968	B 6	Brewers, 60	C 3	Cromwell, 200	C 4
Perry, 34,961	C 7	Briarwood, 428	B 5	Cropper, 250	B 5
Pike, 68,264	C 8	Broad Fields, * 615	B 5	Cub Run, 250	C 4
Powell, 6,674	C 7	Brodhead, 762	C 6	Cuba, 100	D 2
Pulaski, 34,403	C 6	Bromley, * 98	C 6	Cumtoga, 327	D 8
Robertson, 2,443	B 6	Brooks, 150	B 6	Cunningham, 300	D 2
Rockcastle, 12,334	C 6	Brookside, * 400	D 7	Curdsville, 175	C 3
Rowan, 12,808	B 7	Brooksville, 601	B 6	Custer, 650	C 4
Russell, 11,076	C 5	Browns, 300	A 5	Cutshin, 450	C 7
Scott, 15,376	C 5	Brownsville Village, * 598	B 5	Cynthiana, 5,641	B 6
Shelby, 18,493	B 6	Brownsville, 473	C 4	Daniel Boone, 300	C 3
Spencer, 11,548	D 4	Bryantville, 73	C 4	Danville, 9,010	C 6
Spencer, 5,680	B 4	Buchanan, 125	B 8	Dawn, 800	C 8
Taylor, 16,285	C 5	Buckner, 200	A 5	Dawson Springs, 3,002	C 3
Todd, 11,364	D 3	Buechel, 8,000	A 5, B 5	Dayton, 9,050	A 8
Trigg, 8,870	D 3	Bufalo, 201	C 6	De Coursey, 250	A 8
Trimble, 5,102	B 3	Bulan, 700	C 5	Decoy, 300	C 7
Union, 14,537	C 2	Bullittsville, 100	A 7	Deekoven, 296	C 2
Warren, 45,491	C 4	Burgin, 879	C 6	De Mossville, 90	A 8
Washington, 11,168	C 5	Burkesville, 1,688	D 5	Denton, 100	B 8
Wayne, 14,244	D 6			Devondale, * 477	B 5
Webster, 25,815	C 3			Dexter, 250	D 2
Wolfe, 6,534	C 7			Dixen, 541	C 3
Woodford, 11,913	B 6				



KENTUCKY

Mixed Evergreen and Deciduous Trees

Deciduous Trees

Grass

State Capitals

Other Cities

Railroads

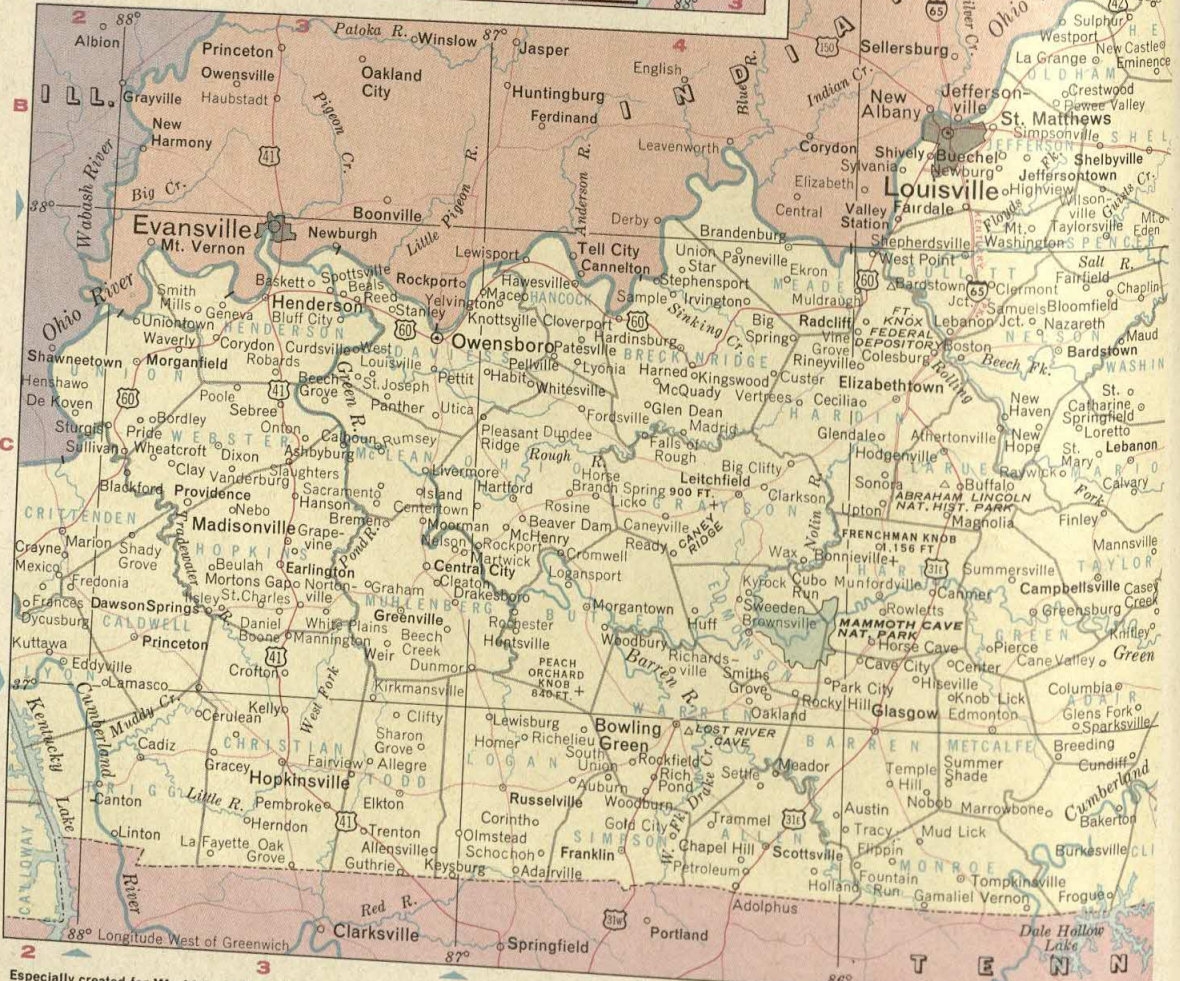
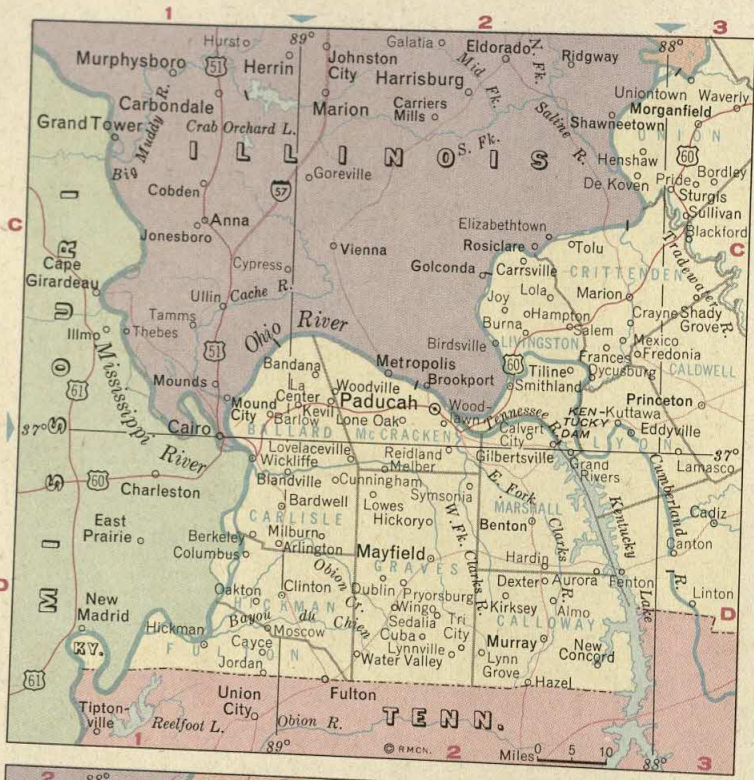
City Limits

1 inch = 47 Statute Miles

Miles 0 5 10 20 30 40 50

Lambert Conformal Conic Projection

Especially created for World Book Encyclopedia by Rand McNally and World Book editors

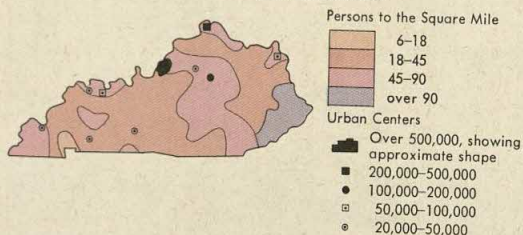


KENTUCKY

The maps and graphs on this page show the variations in rainfall, population, and growing season. They also tell the chief ways the people earn their living and the average yearly value of the state's main products.

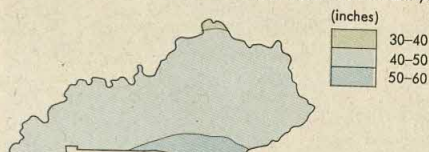
POPULATION

Most of the people of Kentucky live in rural communities.



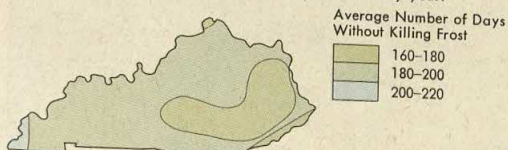
AVERAGE YEARLY RAINFALL

The southern part of Kentucky receives more than 50 inches of rain each year.

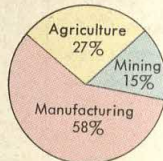


GROWING SEASON

The western part of Kentucky has almost seven frost-free months every year.



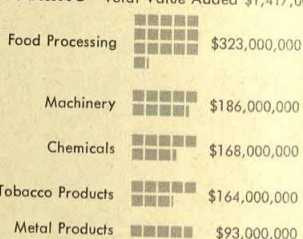
TOTAL PRODUCTION \$2,454,000,000



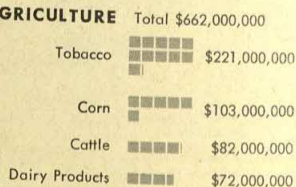
KENTUCKY'S LEADING PRODUCTS

Each Box ■ Represents \$20,000,000 Worth of Products.

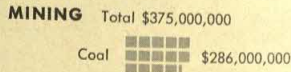
MANUFACTURING



AGRICULTURE



MINING

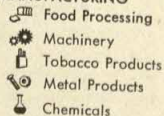


All figures are based on government statistics for a 4 year period.

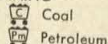
ECONOMIC ACTIVITY

Food processing and machinery account for 21 per cent of the state's income.

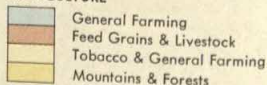
MANUFACTURING



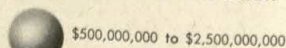
MINING



AGRICULTURE



KENTUCKY'S CHIEF MANUFACTURING CENTER



			(Map Index) KENTUCKY		
Graymoor, 535	B 5		Reed, 225	C 3	Strathmoor Village,*
Grayson Branch, 102	B 8		Reidland, 300	D 2	498
Grayson, 1,692	B 8		Richardson, 125	C 8	Strunk, 450
Greensburg, 2,334	C 5		Richardsville, 200	C 4	Sturgis, 2,209
Greenup, 1,240	B 8		Richlawn,* 649	B 5	Sullivan, 250
Greenville, 3,198	D 6		Richmond, 12,168	C 8	Sulphur, 275
Greenwood, 200	C 3		Richwood, 100	C 5	Summer Shade, 250
Guffey, 75	D 3		Riley, 150	C 5	Sunnysville, 350
Guthrie, 1,211	D 3		Rineville, 350	C 5	Sunny Acres,* 844
Halderman, 250	B 7		Ringos Mills, 45	B 7	Sylvania,* 1,200
Hamilton	A 7		Roark, 500	C 7	Symonia, 400
Hamilton Park,* 800	B 6		Robards, 375	C 4	Tallmadge, 500
Hampton, 100	C 2		Roberts, 314	C 4	Taylor Mill, 710
Hanson, 376	C 7		Rochford, 150	D 4	Taylorville, 937
Hardburly, 650	D 2		Rockholds, 500	D 6	Teges, 300
Hartford, 458	D 2		Rockport, 396	C 4	Temple Hill, 55
Hartinsburg, 1,377	C 4		Rocky Hill, 178	C 4	Theakka, 662
Hardwick, 300	D 6		Rolling Fields, 816	B 5	Thompson, 1,186
Hardy, 854	C 8		Rosine, 350	C 6	Thousandsticks, 600
Harlan, 4,177	D 7		Roswell, 200	C 6	Threeforks, 500
Harned, 375	C 4		Rosettes, 275	C 5	Tieline, 100
Hardsburg, 1,061	C 6		Royalton, 300	C 7	Tip Top, 300
Hartford, 1,613	C 6		Royville,* 295	C 5	Tollesboro, 480
Harveyton, 300	C 7		Rugless, 150	B 7	Tolt, 325
Hatfield, 600	C 8		Rumsey, 252	C 3	Tompkinsville, 2,091
Hawesville, 882	C 4		Rural, 200	B 8	Tracy, 50
Hazard, 5,958	C 7		Rush, 300	B 8	Trammel, 15
Hazel, 342	D 2		Russell, 1,458	B 8	Trenton, 542
Hazel Green, 259	C 6		Russell Springs, 1,125	C 5	Tri City, 150
Hazle Patch, 200	C 6		Russville, 5,861	D 4	Tutor Key, 500
Hebron, 300	A 8		Sacramento, 429	C 3	Twila, 200
Hellier, 104	C 8		Sadleville, 276	C 5	Tyrone, 500
Henderson, 16,892	C 3		Sadleville, 276	C 5	Tyrone, 240
Henryville, 125	B 6		St. Catharine, 200	C 5	Union, 135
Henshaw, 200	C 2		St. Charles, 421	C 3	Union Star, 36
Herdson, 150	D 3		St. Joseph, 300	C 5	Uniontown, 1,255
Hickman, 1,537	D 1		St. Mary, 250	C 5	Upper Tyeart
Hickory, 170	D 2		St. Matthews,	A 5, B 5	Upton, 547
High Bridge, 100	C 6		St. Regis Park,*	B 5	Urban, 300
Highland Heights,			1,179	C 2	Utica, 300
3,491	A 8		Salem, 480	C 2	Valley Station,
Highspoint, 500	D 7		Salt Lick, 370	B 7	10,553
Hillsboro, 125	B 6		Salva, 500	C 6	Valley View, 200
Hill Top, 475	B 7		Salversville, 1,173	C 7	Vanceburg, 1,881
Hilltop, 75	B 7		Samuels, 250	C 5	Van Lear, 921
Hima, 500	C 7		Sanders, 203	B 6	Verda, 950
Himerville, see Beauty			Sandy Hook, 195	B 7	Verona, 225
Hindman, 793	C 8		Sanfordtown, 100	A 8	Versailles, 4,060
Hiseville, 196	C 5		Sardis, 190	B 7	Vico, 900
Hitchins, 900	B 8		Sassafras,* 500	D 6	Vine Grove, 2,435
Hodenville, 1,985	C 8		Saxton, 650	D 6	Visalia, 253
Holland, 150	D 4		Schochoh, 100	D 4	Waco, 300
Hollyville,* 464	B 5		Science Hill, 463	C 6	Waddy, 300
Homer, 30	D 4		Scottsville, 3,324	D 4	Wallins Creek, 468
Hopkinsville, 19,465	D 3		Seranton, 127	C 3	Walton, 1,530
Horse Branch, 300	C 4		Seco, 331	C 8	Warfield, 295
Horse Cave, 1,780	C 5		Sedalia, 258	D 2	Warsaw, 981
Houston Acres,* 723	C 8		Semiway, 200	C 3	Washington, 600
Hueysville, 650	C 8		Seneca Gardens,* 928	B 5	Water Valley, 267
Huntsville, 150	C 4		Settle, 250	D 1	Waterford, 60
Hustonsville, 387	C 6		Shady Grove, 100	C 3	Wax, 120
Hyden, 348	C 7		Sharpburg, 311	B 7	Wayland, 1,340
Idamay, 100	C 7		Shawhan, 250	B 6	Waynesburg, 450
Independence,			Shelbiana, 800	C 8	Webbville, 225
Indian Hills,* 601	B 5		Shelby City, 500	C 6	Weeksburg, 700
Inez, 566	C 8		Shelbyville,* 5,225	B 5	Weir, 150
Irma, 17	C 2		Shenandoah,	B 5, C 5, D 5	Wellington, 804
Irvine, 2,955	C 7		Shields,* 900	D 7	West Buchel,* 504
Irvington, 1,190	C 4		Shively, 15,153	A 5, B 5	West Liberty,
Island, 462	C 3		Silver Grove, 1,207	B 8	1,165
Ivinton, 500	C 8		Simpsonville, 220	B 5	West Louisville, 250
Jackhorn,* 700	C 8		Skyline, 125	A 5	West Point, 1,957
Jackman, 1,852	C 7		Slade, 200	C 7	West Somerset, 400
Jamboree, 600	C 8		Slaughters, 284	C 3	West Van Lear,* 900
Jamestown, 792	D 5		Sloans Valley, 250	D 6	Westport, 125
Jarvis, 500	D 7		Smith Mills, 300	C 3	Westwood, 6,000
Jefferson,			Smith Town, 200	C 2	Wheelwright, 1,518
Jeffersonville, A 5, B 5			Smithland, 541	C 4	White Plains, 359
Jenkins, 3,202	C 7		Soldier, 150	B 7	White Plains, 500
Johns Hills, 50	A 8		Somerset, 7,112	C 6	Whitesburg, 1,774
Johnstown, 500	A 5		Sonora, 268	C 5	Whitesville, 713
Jonesville, 250	B 6		South Carrollton,*	C 3	Whitley City, 1,034
Jordan, 30	D 2		234	Fort Mitchell,	D 6
Joy, 40	C 2		4,086	Willard,* 239	D 1
Judy, 80	B 7		South Hills,* 752	B 6	Willard, 161
Junction City, 1,047	C 6		South Park, 600	A 5	Williamstown, 3,478
Kajay, 400	D 7		South Portsmouth,	B 7	Williamstown, 1,611
Keene, 500	C 6		378	Wilmington, 300	C 5
Keeneland,* 590	B 5		South Shore, 658	B 8	Wilmore, 2,773
Kelso, 200	B 7		South Union, 150	D 4	Wilsonville, 30
Kelly, 175	C 4		South Williamson,	C 8	Winchester, 10
Kenton, 240	A 8		1,097	A 8	Windy Hills,* 1,371
Kenton Vale,* 168	A 6		Southgate, 2,070	A 8	Winston Park,* 744
Kenvir, 950	D 7		Sparksville, 150	C 5	Wiscoal, 100
Kepler, 10	D 4		Sparks, 235	B 6	Wolf Coal, 250
Kettle Island, 375	D 7		Spottsville, 463	C 3	Woodbine, 800
Kew, 231	C 2		Spring Lick, 125	C 4	Woodburn, 291
Keysburg, 100	C 2		Springfield, 2,382	C 5	Woodbury, 94
Kings Mountain, 500	C 6		Springlake, 250	B 5	Woodlawn,* 387
Kingsley, 508	B 5		Springlee,* 987	C 6	Woodlawn, 1,688
Kingston, 200	C 6		Stah,* 1,137	C 6	Woodlawn Park,*
Kingswood, 248	C 4		Stamping Ground, 353	B 6	1,137
Kinnickinnick, 100	B 7		Stanford, 2,019	C 6	Woodville, 100
Kirkmansville, 150	C 2		Stanley, 170	C 3	Worthington, 1,235
Kirksey, 180	C 7		Stanton, 753	C 7	Worthville, 247
Kirkville, 100	C 6		Stearns, 950	C 4	Wrighton, 200
Kitts, 950	D 7		Stephens, 950	C 4	Wurtland,* 950
Knifey, 250	C 5		Stephens, 950	C 4	Yale, 226
Knob Lick, 100	C 5		Strathmoor Gardens,*	B 5	Yatesville, 500
Knoxville, 350	C 4		379	B 5	Yazoo, 100
Kuttawa, 635	C 4		Strathmoor Manor,*	B 5	Yosemite, 200
Kyrook, 150	C 4		434	B 5	Zebulon, 200
La Center, 882	C 2				
Lackey, 221	C 8				
La Fayette, 196	D 3				
La Grange, 2,168	B 5				
Lafayette, 102	D 3				
Lake Louisville,* 228	B 6				
Lakeview, 100	C 2				
Lakeside Park,* 2,214	B 6				
Lamasco, 100	C 3				
Lancaster, 3,021	C 6				
Lantonia Lakes,* 585	A 6				
Lawrenceburg, 2,523	B 6				
Leatherwood, 1,283	C 7				
Lebanon, 4,813	C 5				
Lebanon Junction,					
1,527	C 5				
Leitchfield, 2,982	C 4				
Lenape,* 250	D 7				
Leslie, 40	D 5				
Letcher, 600	D 5				
Level Green, 10	C 6				
Levensburg, 512	D 4				
Lewinsport, 610	C 4				
Lewistown, 62,810	B 6				
Liberty, 1,578	C 7				
Liggett,* 350	D 7				
Ligon, 697	C 8				
Lily, 450	C 8				
Lincolnton, 223	B 6				
Linfork, 65	C 8				
Linton, 90	D 3				
Little, 150	C 7				
Little Rock, 300	B 6				
Livermore, 1,506	C 3				
Livingston, 419	C 6				
Lowell, 82	B 6				
Louisport, 125	C 6				
Lola, 400	C 2				
London, 4,035	C 6				
Loncoak, 2,104	C 2				
Lookout, 900	C 8				
Lookout Heights,* 776	B 6				
Loudon, 500	C 7				
Louisa, 1,082	C 7				
Louthan, 300	D 7				
Louis, 2,071	B 8				
Louisville, 309,639					
(*725,139)	A 5, B 5				
Lovelaceville, 200	D 2				
Loves, 200	D 2				
Louisville, 800	C 8				
Loyal, 1,260	D 7				
Ludlow, 6,233	A 8				
Lynch, 3,810	D 8				
Lyndon, 5,000	A 5				
Lynn Grove, 200	D 2				
Lynnville, 1,711	C 4				
Macon, 200	C 5				
Maackville, 400	C 5				
Madisonville, 13,110	C 3				
Madrid, 45	C 4				
Magdard, 500	C 7				
Magnolia, 300	C 8				
Majestic, 503	C 7				
Manchester, 1,868	C 8				
Manco, 300	C 8				
Mannington, 500	C 3				
Mannsville, 150	C 5				
Marion, 2,468	C 2				
Marrowbone, 200	D 2				
Marshes Siding, 500	D 8				
Mary, 992	C 8				
Martinsburg,					
see Sandy Hook					
Martwick, 300	C 3				
Mayfield, 10,762	D 7				
Mays Lick, 400	B 2				
Maysville, 8,484	C 8				
McAndrews, 533	C 8				
McDowell, 700	C 8				
McHenry, 446	C 4				
McKee, 234	C 7				
McKinney, 300	C 6				
McQuady, 100	C 4				
McRoberts, 1,363	C 8				
McVicker, 300	C 8				
Madewood Estates,*					
131	B 5				
Means, 160	C 7				
Melber, 219	D 2				
Melbourne, 250	A 8				
Mentor, 350	C 3				
Mercer, 500	C 5				
Merrimack, 250	C 5				
Mesbach, 200	D 5				
Mexico, 300	C 2				
Middleburg, 150	C 6				
Middlesboro, 12,607	D 7				
Middletown, 2,264	A 5				
Midway, 1,044	B 6				
Millburn, 400	D 2				
Millford, 100	C 8				
Millard, 300	C 8				
Millersburg, 913	C 8				
Millstone, 900	C 8				
Milton, 365	C 5				
Mill Lane Heights,*					
152	B 5				
Mockingbird Valley,*					
169	B 5				
Monford, 25	C 6				
Monterey, 21	D 3				
Montgomery, 5	D 3				
Monticello, 2,940	D 6				
Moorefield, 200	B 7				
Moorefield, 200	B 7				
Moorman, 250	C 3				
Morehead, 4,170	C 7				
Moreland, 300	C 6				
Morgan, 65	C 6				
Morganfield, 3,741	C 3				
Morgantown, 1,318	C 4				
Morning View, 150	A 8				
Mortons Gap, 1,308	C 3				
Moscow, 100	B 7				
Mount Carmel,* 350	B 5				
Mount Eden, 350	B 5				
Mount Olivet, 386	B 6				
Mount Sterling,					
5,370	B 7				
Mount Vernon, 1,177	C 6				
Mount Victory, 500	C 6				
Mount Washington,					
Mountain Ash, 275	D 6	</			

KENTUCKY

MOUNTAINS). The fertile valley soils yield excellent crops. The region ranks as the state's chief coal-producing area.

The *Bluegrass Region* lies in the north-central part of the state. It is roughly circular in shape. The Ohio River borders it on the north and west, the Appalachian Plateau on the east, and the Pennyroyal Region on the south. The Bluegrass is largely an area of gently rolling bluegrass pastures on which horses, cattle, and sheep graze. Farmers grow abundant crops of tobacco and corn in its deep, fertile soils. Most of Kentucky's people live in the Bluegrass, and in the cities along the Ohio River. A narrow, semicircular band in the southern part of this area is called the Knobs Region. It features dome-like knobs and interlaced flood plains. These knobs, rising like volcanic cones from the flat valley floors, give the area its name. The light soils of the knobs soon wear away when cultivated. For this reason, they have been left wooded to hold the soil.

The *Pennyroyal Region* was named for an herb of the mint family that grows here. This area covers the entire southern part of the state from the southeastern mountains west to the Tennessee Valley. Its two arms encircle the Western Coal Field and reach to the Ohio River. The land surface varies from level farm lands to rocky cliffs and forested hills. A treeless area of sinkholes lies in the central part of this region. It was once called *The Barrens*, because the Indians continually burned the forests to provide grasslands for buffalo. Thousands of miles of underground passages thread the underlying limestone rock. One of these passages is Mammoth Cave.

The *Western Coal Field* is a roughly circular region of open fertile valleys. These valleys are separated by wooded ridges and encircled by high, rocky cliffs. The region is surrounded by the Pennyroyal Region, except for the Ohio River on the north. About half of the state's coal reserves lie in this area. Except for a rocky upland section, it is a productive farming area.

The *East Gulf Coastal Plain* covers the entire western part of the state between the Tennessee and Mississippi rivers. It is the lowest-lying area in Kentucky. Andrew Jackson helped arrange its purchase from the Chickasaw Indians in 1818. The area is frequently called the Jackson Purchase Region. Cypress swamps and oxbow lakes cover the wide flood plains of the area (see *OXBOW LAKE*). Low, worn hills rise above the flood plains. A double bend in the Mississippi River cuts off an area of about 10 square miles of Kentucky. This area cannot be reached from the rest of the state without going through part of Missouri or Tennessee.

Mountains. Kentucky's only mountainous region lies in the eastern part of the state. The chief ranges are the Cumberland, Pine, and Little and Big Black. Kentucky's highest point is Black Mountain, which rises 4,145 feet on the southeastern border.

Rivers, Waterfalls, and Lakes. The Ohio and Mississippi rivers form part of the state's border. They serve as the main drainage channel for Kentucky's other rivers. The Kentucky boundary lies on the northern shore of the Ohio River, not in the center of the river, as in most cases when a river marks a boundary. The Big Sandy River and its tributary, the Tug Fork, also form part of the state's border. The principal rivers flowing through

the state include the Barren, Cumberland, Green, Kentucky, Licking, Tennessee, and Tradewater. These rivers flow west from the high mountain ranges on the eastern border.

Cumberland Falls, the state's highest waterfall, is on the Cumberland River in southeastern Kentucky near Corbin. Its waters plunge 68 feet. Scenic Lake Cumberland lies nearby. Dale Hollow Reservoir, a mountain-rimmed, 40,000-acre lake created by the Tennessee Valley Authority, is on the Kentucky-Tennessee border. The TVA also created 185-mile-long Kentucky Lake, or Reservoir, in southwestern Kentucky.

Natural Resources include fertile soils, excellent climate for farming, abundant water, rich mineral deposits, and forests that cover about half of the state.

Soil. Sandstones and shales make up the surface rocks of the Appalachian Plateau. Underlying limestones with high phosphate content make the soils of the Bluegrass the richest in the state. Weathered shales, which wear down rapidly when cultivated, make up the soils of the Knobs area. Sandy and silt loams lie in the eastern part of the Pennyroyal Region, and limy phosphorous soils in the western part. A yellow silt loam covers the upland areas of the Western Coal Field. But the valleys here have fertile soils. Soils carried by wind and water cover the East Gulf Coastal Plain, except in a narrow strip where erosion has uncovered yellow-brown silt loam.

Minerals. Kentucky's coal deposits are the state's most important mineral resource. Miners dig bituminous (soft) coal from mines in two regions, the Western Coal Field and the Appalachian Plateau. Petroleum, natural gas, fluorite, rock asphalt, plastic clays, and clays used in tilemaking account for most of the other mineral resources. Limestone is cut from cliffs along the Kentucky River in the north-central part of the state.

Forests. Kentucky lies in the great hardwood forest region between the Allegheny Mountains and the western prairies. Second-growth timber grows on almost half of the land. These forests produce about one third more timber than lumbermen cut each year. The most common trees include oak, beech, basswood, black gum, pine, hemlock, maple, ash, walnut, hickory, sweet gum, and yellow poplar. Common but less valuable trees include locust, cedar, and sycamore.

Plant Life. Each of the five land regions has its own kinds of plant life. The most varied growth occurs in the Appalachian Plateau, with rhododendron, azalea, mountain laurel, redbud, dogwood, blueberry, huckleberry, magnolia, and ferns. Oak forests cover many hills in the Knobs area. Here, and in the forests of the Western Coal Field, buttercup, toothwort, spring beauty, anemone, and other wild flowers blossom in spring. Bluegrass grows in the Bluegrass and Pennyroyal regions, and occasionally in the Knobs. Broomsedge and pennyroyal flourish in the Pennyroyal Region. Plant life in the Mississippi River lowlands of the East Gulf Coastal Plain includes such trees as the cypress and pecan.

Animal Life. Small animals, including the fox, squirrel, opossum, mink, rabbit, raccoon, muskrat, and woodchuck, live throughout the state. More than 100 kinds of fishes swim in the streams. These include the muskellunge, catfish, crappie, bass, perch, buffalo, sturgeon, pike, and other game fishes.

More than 300 kinds of birds live in the state at various times of the year. But only about 175 kinds are

native to Kentucky. American egrets, great blue herons, snakebirds, double-breasted cormorants, and other waterfowl breed in the marsh country north of Reelfoot Lake.

The Climate of Kentucky is mild. Northern Kentucky's average January temperature varies between 32°F. and 36°F., and southern Kentucky's between 36°F. and 38°F. The state's record low of -30°F. was recorded at Loretto and Princeton in February, 1899. Warm days and cool nights occur throughout the summer. Northern Kentucky has an average July temperature of about 76°F., and southern Kentucky about 78°F. The state's high of 114°F. was set at Greensburg in July, 1930. Rainfall averages 44 inches annually, with normally even distribution throughout the year. The heaviest rainfall occurs in the southern part of the state, where the average is 50 inches annually. There is a gradual decrease in rainfall to the north, with the lightest annual average of 38 inches falling around Covington. An average of 14 inches of snow falls every year throughout the state.

Life of the People

The People. The United States Bureau of the Census reported that 3,038,156 persons lived in Kentucky in 1960. This was an increase of 3 per cent over the figure of 2,944,806 reported in the 1950 census. An average of 75 persons live on every square mile. About 55 of every 100 persons live in farm areas, and the rest in towns and cities. Most Kentuckians were born in the United States. The first settlers were chiefly of English, Irish, Scottish, German, and French Huguenot ancestry.

Kentuckians take great pride in their hospitality, and guests receive a hearty welcome. Housewives follow favorite family recipes in the preparation of Kentucky country hickory-smoked and sugar-cured ham, butter-milk and beaten biscuits, and Kentucky fried apples. Kentuckians are especially proud of their native Bibb lettuce and of burgoo, a thick, spicy mixture midway between meaty soup and stew. Mint julep has long been the favorite alcoholic drink.

More Kentuckians belong to the Southern Baptist Church than to any other faith. Other important religious groups include the Roman Catholic, Methodist, Disciples of Christ, and Presbyterian.

Cities. Louisville, Lexington, Covington, Owensboro, Paducah, and Ashland are Kentucky's largest cities. Louisville grew from a pioneer river town into the largest metropolitan center in the state.

Covington, across the Ohio River from Cincinnati, is northern Kentucky's largest city. Ashland, also on the Ohio River, is a large steel-milling and oil-refining center. Lexington serves as the trading center of a rich agricultural region. Paducah, an agricultural river town, has a large tobacco market, a nearby atomic-energy plant, and a large strawberry-marketing association.

Fifteen other Kentucky cities have populations of more than 10,000. Early settlers founded most Kentucky cities as trading and marketing centers. Several of them, such as Owensboro, have become heavily industrial. For more information, see the separate articles on Kentucky cities listed in the *Related Articles* at the end of this article.

Country Life. The life of the Kentucky countryside is centered in villages and small towns, with much of

the activity in the schools and churches. Until the 1920's, the better country homes were largely patterned after the *dogtrot*, or double, houses introduced from Virginia and the Carolinas. These houses have two separate sections with a continuous roof. The central connecting passage, or breezeway, is called a "dogtrot." It got this name because the family dogs could use it as a passageway between the two parts of the house, or as a place to sleep in the shade.

The customary organization of a modern Kentucky farmstead includes a house, a tractor and machine shed, and a barn. The barns may serve as shelters for cattle and sheep, and storage places for hay and grain. The large tobacco barns in burley tobacco areas are tall, airy structures. They are ventilated on the sides by large slits which can be opened and shut during the tobacco-curing season. Most farms once had a log smokehouse where families cured their meats. But the building has almost disappeared, due to rural electrification and the use of home freezers.

The automobile has made it possible for farm families to move about with ease, but Saturday is still a popular day for crowding into town to sell products and buy supplies. The country store and the fourth-class post offices are popular social centers. Kentucky has an unusually large number of these small post offices, which serve sparsely populated farm areas.

Work of the People

About 25 of every 100 employed persons in Kentucky make their living in agriculture, 18 in manufacturing, and 15 in wholesale and retail trade. About 8 of every 100 work in the mining industry, 8 in transportation, and 6 in the building trades. About 20 of every 100 have professional positions or "white-collar" jobs.

Agriculture. Most Kentucky farms lie in the Bluegrass and Pennyroyal regions. Farms average 89 acres in size. Crops cover about a third of the land, and grass and woodlands the remainder. Leading products include tobacco, corn, hay, small grains, and seed grasses.

Tobacco provides between a third and a half of the annual farm income. Two varieties, white burley tobacco and dark tobacco, account for most of the tobacco acreage. Growers raise burley tobacco in 110 counties. Dark tobacco grows in 33 western counties, sometimes called the "Black Patch." Lexington has the world's largest loose-leaf tobacco market. Paris and Cynthiana also have large tobacco markets. Kentucky ranks second among the tobacco-producing states.

Other Major Crops include corn, hay, soybeans, and wheat. Farmers use most of their corn and hay as live-stock feed. The state leads in the production of bluegrass, orchard grass, and lespedeza seed. Jefferson and Oldham counties produce large potato crops. Farmers throughout the state grow strawberries, plums, pears, and peaches. Henderson County has large apple and peach orchards. Calloway County is famous for its large, high-quality popcorn crop.

Thoroughbreds. Kentucky has long been known as the home of fine race horses famous for their speed, strength, and endurance. Kentucky breeders developed the American Saddle Horse in the 1800's. Most Thoroughbred horses raised in Kentucky come from the Bluegrass

KENTUCKY

pastures around Lexington. Claiborne Farm near Paris ranks as one of the largest Thoroughbred-breeding farms in the world. It covers 2,113 acres. Bluegrass breeders have trained such famous race horses as Man o' War, Lexington, War Admiral, Equipoise, Scabiscuit, Whirlaway, Native Dancer, Bull Lea, Polynesian, and Nashua.

Other Livestock includes cattle, hogs, sheep, and poultry, which farmers raise throughout the state. Until the 1900's, Kentucky led the states in raising mules. Richmond, Owensboro, Lexington, and Lancaster are the most important livestock centers. Meat-packing and processing plants in Louisville prepare meat products for much of the southeastern United States. The Bluegrass is well known for its spring lambs.

Manufacturing and Processing. Most of the state's factories lie in areas along the northern border. But, during the 1950's, industry began to develop rapidly in other areas, including Paducah and Lexington. Manufacturing and mine production earn about three times as much as crops and livestock.

Factories at Louisville and Owensboro process most of the tobacco crop of the state. Kentucky ranks third among the states in the production of cigars and cigarettes. Louisville distilleries produce most of Kentucky's whiskies. The state leads the nation in whisky production. Distilleries serve as local markets for small-grain crops. Their by-products are important sources of feed for livestock.

Mills at Ashland, Newport, and Owensboro produce iron and steel. Louisville and Ashland have oil refineries. Potteries in Madison County and at Murray, Mayfield, and Paducah make tiles and other clay products. Large factories at Calvert City produce chemicals and petrochemicals. Workmen make bricks, flour, furniture, shirts, and overalls at Bowling Green. The biggest baseball-bat company in the United States is in Louisville. Covington has one of the world's largest X-ray equipment laboratories, as well as clay-product and furniture factories. Paducah has railroad repair shops, woodworking plants, brickworks, tileworks, potteries, and clothing and shoe factories.

Kentucky ranks as the leading meat-packing state in the southeastern United States. Other important industries include the manufacture of machinery, disinfectants, insecticides, textiles, glass products, fertilizer, cement, ink, paint, soybean oil and meal, and synthetic rubber.

Mining. Kentucky ranks third among the states as a producer of bituminous coal. The state's coal mines lie in the Appalachian Plateau and in the Western Coal Field. Hopkins, Pike, Perry, Floyd, Letcher, Muhlenberg, and Harlan counties are the principal coal mining centers. Natural gas and petroleum are the next most important mineral products. They come from wells in the coal regions and in other areas. Miners dig iron ore at many places on the lower Cumberland and Tennessee rivers. Ashland was the pioneer iron and steel center west of the Alleghenies. Its first iron mill began producing in 1826.

Kentucky produces about a fourth of the nation's output of fluorite, chiefly in Caldwell, Livingston, and Crittenden counties. Ores from lead and zinc mines in this western Kentucky area supply many state industries. The East Gulf Coastal Plain has deposits of china and

pottery clays, and the Morehead-Grayson area in eastern Kentucky has fire clay, used for firebrick. Limestone quarries lie throughout the state. Several central Kentucky counties have rock asphalt deposits.

Forest Products. Lumber production averages between five and six billion board feet a year. Most of the timber is logged in the southeastern part of the state. Oak accounts for about half the timber cut. Other important trees include pine, yellow poplar, and beech.

Electric Power. The falls of the Ohio River at Louisville, the Kentucky Dam on the Tennessee River at Gilbertsville, and Wolf Creek Dam in Russell County supply hydroelectric power for the state's industries and utilities. Power projects on the Cumberland River and on other state rivers and streams also furnish considerable power. Kentucky power projects produce most of the state's energy. Coal and other fuels produce the rest of Kentucky's power. For Kentucky's kilowatt-hour production, see **ELECTRIC POWER** (table).

Transportation has developed steadily in Kentucky since Daniel Boone marked Kentucky's first highway, the Wilderness Road, through the Cumberland Gap on his trip to the region in 1775.

Aviation. Kentucky has about 70 airports, four of major commercial importance. These are Standiford Field at Louisville, Bluegrass Field at Lexington, Greater Cincinnati Field in suburban Covington, and Paducah Field. Six airlines fly regular schedules in the state. Louisville is the busiest air center, and Covington the second busiest.

Railroads. About 4,000 miles of railroads, operated by five major railroad lines, cross the state. Lexington businessmen built Kentucky's first railroad, the Lexington and Ohio, now part of the Louisville and Nashville system. Its first train carried freight on a six-mile run from Lexington toward Frankfort in 1832.

Roads and Highways. Before the early 1900's, public and private toll companies developed the state's road system. State and federal funds now pay for highway construction. More than two thirds of Kentucky's 63,000 miles of roads and highways are paved. The \$36,000,000 turnpike between Louisville and Elizabethtown opened in 1956.

Waterways. Kentucky leads all the states in miles of stream navigation. Boats can travel on about 1,600 miles of river routes in the state. The Ohio River carries more freight than any other state river.

Communication. Many newspapers, radio stations, and television stations serve Kentucky.

Publishing. The state has about 180 newspapers, more than 30 of them dailies. John Bradford published the first state newspaper, the *Kentucky Gazette*, at Lexington in 1787. The first permanently successful newspaper was the *Advertiser*, established in Louisville in 1818. Other important newspapers published at Louisville included the *Journal* (1830), the *Courier* (1844), and the *Democrat* (1844). Henry Watterson combined these three newspapers in 1868, and made the *Louisville Courier-Journal* one of the nation's leading papers. Other important newspapers include the *Louisville Times*, the *Lexington Herald*, the *Lexington Leader*, and the *Paducah Sun-Democrat*.

Radio and Television. The government licensed the state's first radio station, WHAS, in Louisville in 1922. Kentucky's first television stations were also established

in Louisville. WAVE-TV began operating there in 1948, and WHAS-TV in 1950.

KENTUCKY

Education

Schools. In 1775, Mrs. William Coomes, a pioneer teacher, opened the first Kentucky school in the fort at Harrodsburg. Settlers established several private schools between 1780 and 1800. The Transylvania Seminary, chartered in 1780, opened as a grammar school at Crow's Station, now Danville. It later became Transylvania College, the first college west of the Alleghenies.

In 1794, the state legislature authorized and incorporated the Kentucky Academy as the state's first public school, and gave it 6,000 acres of land near Lexington. The legislature also gave 6,000 acres of land to each county for public schools.

Kentucky schools began to receive increased state aid in 1908. In that year the state assembly adopted so many school laws that it became known as "The Educational Legislature." In 1912, the legislature passed a law that requires children from 7 to 16 to attend school. The legislature combined the state's school laws in 1934, and reorganized the school system. Each of the state's 120 counties is a separate school district. Some counties also have independent school districts. The State Board of Education administers the public-school system. The chief educational officer is the superintendent of public instruction. For information on the number of students and teachers in Kentucky, see EDUCATION (table).

Kentucky has 19 accredited four-year colleges and universities, 9 nonaccredited four-year colleges, and 11 junior colleges. The University of Kentucky at Lexington, and the University of Louisville rank as Kentucky's two largest institutions of higher learning.

Libraries and Museums. Kentucky has more than 80 public libraries and about 100 county bookmobiles. The Lexington Public Library, organized in 1795, is the oldest circulating library west of the Alleghenies. The University of Kentucky Library has the largest and most complete collection of books in the state. The Filson

Club Library, in Louisville, owns a large collection of books and manuscripts on early state and regional history. Transylvania College has a collection of old and rare books on medicine, medical botany, and law. The Trappist Library at the Abbey of Our Lady of Gethsemane, near New Haven, has the most complete collection of Roman Catholic literature in the South.

The Audubon Museum in Henderson County exhibits collections of Audubon prints, stuffed birds, books, and portraits. The Williams' Natural History Museum in Covington houses more than 200,000 insect specimens. It also has more than 5,000 books on natural history, including the largest collection of books in the world about insects. Other Kentucky museums include the Rush Museum in Lexington; the Mansion Museum in Harrodsburg; and the Municipal Museum, the Filson Club Museum, and the Speed Memorial Museum in Louisville.

The Arts

Painting. By 1825, Lexington was known as "The Athens of the West," and ranked with New Orleans as a center for portrait painters. Matthew H. Jouett (1787-1827), John Neagle (1796-1865), Oliver Frazier (1808-1864), and Joseph H. Bush (1794-1865) painted the distinguished lawyers, statesmen, and planters of the period. Edward Troye (1804-1874), who came to Kentucky from Switzerland in 1828, became nationally famous as a painter of horses. Frank Duveneck was perhaps Kentucky's most distinguished artist. He influenced much of American art in the late 1800's. Duveneck painted everyday scenes with broad, flat strokes.

Literature. Irvin S. Cobb, journalist and columnist, became nationally known for his humorous books. Many of his stories were about his home town of Paducah. Alice Hegan Rice wrote *Mrs. Wiggs of the Cabbage Patch*, and Annie Fellows Johnston (1863-1931) also wrote many books for children. Elizabeth Madox Roberts (1886-1941) wrote the novel, *The Time of Man*, the story of the wandering life of a mountain girl and her family.

William Littell (1768-1824) wrote books on Kentucky law. Lewis Collins (1797-1870) compiled the state's first history, *History of Kentucky*. George D. Prentice (1802-1870) edited the *Louisville Daily Journal* and wrote witty features for newspapers throughout the country. James Lane Allen (1849-1925) wrote a series of novels that are notable for their local color, regionalism, and Kentucky history. John Fox, Jr., described the mountaineers of the Cumberlands in his novels.

Music. Kentuckians have always sung folk songs and played folk music. Stephen Collins Foster immortalized the state in his popular song, "My Old Kentucky Home."

Every year the Louisville Symphony Orchestra presents the works of composers from many lands. During the 1950's, the orchestra became a leader in performing works by living composers. It has commissioned many works with funds from a \$400,000 grant from the Rockefeller Foundation.

Crafts. Kentucky began developing its program to revive and stimulate pioneer handicraft skills under the leadership of Berea College in 1893. This college has established centers throughout the state where Kentuckians make furniture, textiles, ironwork, and toys.

UNIVERSITIES AND COLLEGES

The following accredited universities and colleges in Kentucky have separate articles in THE WORLD BOOK ENCYCLOPEDIA. For enrollment, see UNIVERSITIES AND COLLEGES (table).

NAME	LOCATION	FOUNDED
Asbury College	Wilmore	1890
Bellarmino College	Louisville	1950
Berea College	Berea	1855
Brescia College	Owensboro	1925
Centre College of Kentucky	Danville	1819
Eastern Kentucky State College	Richmond	1906
Georgetown College	Georgetown	1787
Kentucky, University of	Lexington	1865
Kentucky State College	Frankfort	1886
Kentucky Wesleyan College	Owensboro	1860
Louisville, University of	Louisville	1798
Morehead State College	Morehead	1922
Murray State College	Murray	1922
Nazareth College	Louisville	1920
Transylvania College	Lexington	1780
Union College	Barbourville	1879
Ursuline College	Louisville	1921
Villa Madonna College	Covington	1921
Western Kentucky State College	Bowling Green	1906



Kentucky Horse Breeders have raised many of the nation's thoroughbreds since the early 1800's.

Bradley Smith, Photo Library



Laura, Shostal



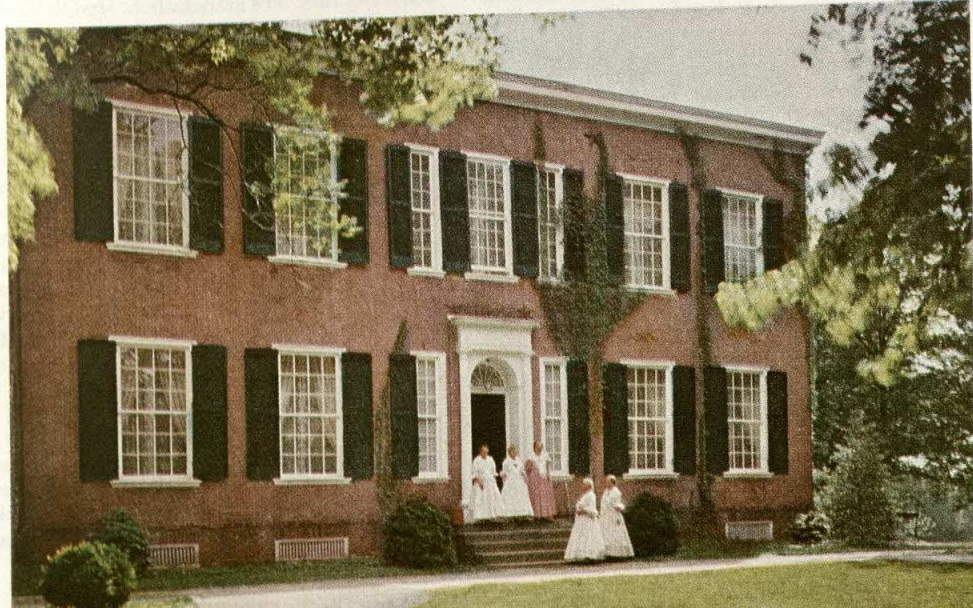
Commonwealth of Kentucky

Abraham Lincoln's Birthplace, a small log cabin, stands in the Lincoln Memorial Building in Lincoln Birthplace National Historic Site.

Tobacco Farmers hang burley leaves on long poles to ripen in the sun. Fields of dark and burley tobacco thrive throughout the state.

"My Old Kentucky Home," Stephen Foster's immortal song, was written at Federal Hill, a Georgian-style colonial mansion near Bardstown.

Lynn, F.P.G.



KENTUCKY

Children whittle figures and animals in these centers.

In 1922, D. C. Churchill, a professor at Berea College, established the Churchill Weavers, a textile-manufacturing plant, at Berea. The plant has 40 looms.

Interesting Places to Visit

Mammoth Cave National Park in central Kentucky ranks as the state's most popular attraction. One of the caves in this park, Floyd Collins Crystal Cave, stretches for about 32 miles underground. It is one of the world's largest caves. Cumberland Falls, in southeastern Kentucky, is known as the "Niagara of the West." Natural Bridge in the scenic Red River Valley is a famous landmark. Churchill Downs in Louisville, site of the world-famous Kentucky Derby, attracts many visitors.

Most Kentucky cities have several famous houses. Henry Clay's home, Ashland, is near Lexington. Mary Todd Lincoln's home and the Hunt-Morgan House, associated with the Confederate cavalry leader John Hunt Morgan, stand in Lexington. The homes of George Rogers Clark and Zachary Taylor are in Louisville. Daniel and Rebecca Boone are buried in a beautiful crypt in a Frankfort cemetery.

Sportsmen visit Kentucky for fishing and boating. The state's most popular fishing areas include Kentucky Dam, Cumberland Lake, Herrington Lake, Dale Hollow Reservoir, and Dewey Lake.

Following are brief descriptions of some of Kentucky's most interesting places to visit.

Breaks of the Sandy lie near Elkhorn City. Here the Russell Fork breaks through Pine Mountain in a deep gorge, and joins the Big Sandy River.

Elizabethtown, where Abraham Lincoln's father lived, is the seat of Hardin County. A museum exhibits Indian relics and a Lincoln collection.

Fort Thomas Military Reservation lies at Fort Thomas. The United States Army built the first building on this site in 1888.

Hindman Settlement School, established in 1902 at Hindman, gives mountain children instruction in homemaking and industrial and social subjects.

Horse Farms, where Kentucky's famous racing Thoroughbreds are raised, lie around Lexington. *Hamburg Place* is the home of the famous John E. Madden Thoroughbreds. *Llangollen*, the *C. V. Whitney Farm*, and *Elmendorf* have produced many famous racing horses. *Dixiana Farm* has an excellent training track. *Faraway Farm*, home of Man o' War, and *Spindletop*, famous for American Saddle Horses, lie among rolling meadowlands. *Calumet Farm* has produced such famous horses as Citation, Ponder, and Whirlaway.

Hurricane Hall lies near Georgetown. Robert Quarles built this old Georgian colonial-style house of white-washed brick in the late 1700's.

Liberty Hall, a Georgian colonial mansion, is in downtown Frankfort. Thomas Jefferson designed this house for Senator John Brown, who built it in 1796.

Shakertown, now called **Pleasant Hill**, is an old village near Lexington. The Shakers, a religious sect, settled in this area in 1805. See SHAKERS.

National Parks and Forests. Mammoth Cave National Park, about 100 miles south of Louisville, covers over 51,000 acres. Mammoth Cave, the park's principal attraction, has more than 150 miles of explored corridors on five separate levels. Echo River flows through the lowest level, about 360 feet underground. The government established the park in 1926.

The Cumberland National Forest, covering 458,968 acres, extends northeast from Kentucky's southern boundary. The forest has limestone caves, mineral springs, natural rock gorges, and sandstone cliffs more than 100 feet high.

Abraham Lincoln Birthplace National Historic Site is near Hodgenville in central Kentucky. The site covers 116½ acres, most of which was part of the farm of Lincoln's father. It includes the log cabin where Lincoln was born. It was founded as Abraham Lincoln National Historical Park in 1916, and renamed in 1959.

State Parks and Shrines. Kentucky has 17 state parks and 10 state shrines and memorials. The following list includes some of the more important parks.

Audubon State Park (520 acres), near Henderson, includes a bird refuge, a park with great beech trees, and a lake for fishing. A museum houses paintings and relics of John James Audubon, the naturalist.

Columbus-Belmont Battlefield State Park (177 acres), near Columbus on a bluff of the Mississippi River, has a museum of Civil War relics.

Cumberland Falls State Park (1,098 acres), near Corbin, includes Cumberland Falls with its famous "moonbow" formed by the mist of the falls on moonlit nights.

Kentucky Dam Village State Park (1,000 acres), at Gilbertsville, lies on Kentucky Lake and has facilities for fishing, boating, swimming, and picnicking.

Levi Jackson Wilderness Road State Park (815 acres), near London, includes Natural Bridge with a 30-foot span at the top, Balanced Rock, and Devil's Gulch.

Pine Mountain State Park (2,500 acres), near Pineville, includes Laurel Cove, a natural amphitheater where the colorful Mountain Laurel Festival is held.

Pioneer Memorial State Park (28 acres), at Harrodsburg, has a replica of Old Fort Harrod, the first white settlement in the state.

Other state parks are *Kentucky Lake*, *Lake Cumberland*, *Natural Bridge*, *Jennie Wiley*, *Carter Caves*, *Cherokee*, *General Butler*, and *Pennyrile Forest*.

Kentucky has 10 state shrines and memorials. *Isaac Shelby Memorial*, near Danville, is the burial place of Kentucky's first governor. *Jefferson Davis Monument*, near Hopkinsville, 351 feet high, is one of the highest monuments in the United States. It commemorates Jefferson Davis' birthplace. *Lincoln Homestead State Shrine*, near Springfield, has a replica of the log cabin of Abraham Lincoln's grandfather. *My Old Kentucky Home State Shrine*, near Bardstown, preserves the home of Judge John Rowan, cousin of Stephen Foster. *Perryville Battlefield Monument State Shrine*, near Perryville, commemorates the battle between 22,000 Union soldiers and 17,000 Confederate troops on Oct. 7, 1862. *Constitution Square State Shrine*, in Danville, is a restoration of the old courthouse and other buildings on the square where Kentucky's constitution was framed and adopted in 1792. *Blue Licks Battlefield State Shrine*, covering 100 acres between Paris and Maysville, commemorates the last battle of the Revolutionary War. A museum has historic Indian relics and prehistoric animal bones. Other shrines are the *Old Mulkey Meeting House*, the *William Whitley House*, and the *Dr. Thomas Walker Memorial*.

Annual Events in Kentucky

Many of Kentucky's most important annual events are sports competitions and folk festivals. Perhaps the state's most famous annual show is the Kentucky Derby. This horse race is held on the first or second Saturday in

State Capitol at Frankfort was completed in 1909. The Capitol Annex, finished in 1952, houses additional executive offices. The Governor's Mansion, lower center, harmonizes architecturally with the Capitol.



Commonwealth of Kentucky

May at Churchill Downs in Louisville. Other annual events in Kentucky include the following.

February, Mule Day in Mayfield, third Monday.

March, High School Basketball Tournament in Louisville (no fixed date).

April, Keeneland Races near Lexington (no fixed date).

May, Kentucky Colonel's Fete in Louisville, on the eve of the Kentucky Derby; Singing Convention in Scottsville, first Sunday; Old Southern Harmony Singing Festival in Benton, fourth Sunday.

May-June, Mountain Laurel Festival in Pineville (no fixed date).

June, Statehood Day, June 1; Daniel Boone Day, June 7 (the anniversary of the day Boone first saw Kentucky in 1767); American Folk Song Festival at Traipsin' Woman's Cabin near Ashland, second Sunday.

July, Kentucky Pioneer Memorial Celebration near Harrodsburg, July 16.

September, State Fair in Louisville, second or third week.

October, Singing Convention in Scottsville, first Sunday; Trotting Races in Lexington (no fixed date); Keeneland Races near Lexington (no fixed date).

Government

The official name of Kentucky is "The Commonwealth of Kentucky." This title was adopted to honor the Commonwealth of Virginia, the state that owned the Kentucky region before Kentucky became a member of the Union.

Constitution. The present state constitution was adopted in 1891. Earlier constitutions were adopted in 1792, 1799, and 1850. Constitutional amendments must be approved by a three-fifths vote of each house of the general assembly. Citizens then vote on the amendments at the next general state election. Following the example of Georgia, Kentucky lowered the voting age from 21 to 18 in 1955.

Executive officials include the governor, lieutenant governor, secretary of state, auditor, attorney general, treasurer, commissioner of agriculture, superintendent of public instruction, and clerk of the court of appeals. All these officials are elected for four-year terms. They cannot serve two terms in succession. The governor is responsible for executing all laws adopted by the legislature. The governor's cabinet consists of various commissioners appointed by him, as well as elected officers.

It includes all elective officers provided for in the constitution, except legislators and members of the court of appeals, and the heads of the 21 state administrative departments. The members of the cabinet advise the governor on matters concerning their respective fields.

Legislature. The Kentucky general assembly includes a senate of 38 members and a house of representatives of 100 members. Voters elect one senator from each senatorial district to a four-year term. Half of the senators are elected every two years. House members are elected for two-year terms. The assembly meets in regular session for 60 days in even-numbered years. Sessions usually begin the first or second week in January.

Courts. Kentucky's court system is headed by a court of appeals composed of seven judges elected for eight-year terms. They can succeed themselves in office. Members of the court select the chief justice from their group. Voters elect the judges of circuit courts to six-year terms. County judges serve mainly as administrative officers. Voters of the county elect them for four-year terms. Magistrates and police judges enforce local laws.

Local Government. The chief county official is the county judge, who acts as the presiding official of the fiscal court. This court levies taxes and manages the general affairs of the county. Every county has several magisterial districts, each headed by a justice of the peace. District justices of the peace and the county judge make up a county's fiscal court. Cities function as municipal corporations. The state legislature controls the form of government that a city may adopt.

Taxation. Kentuckians pay state taxes on incomes, retail sales, property, gasoline, motor vehicles, tobacco, alcoholic beverages, and horse racing. More than half the state's tax income comes from taxes on selective retail sales. Income taxes provide about a fifth of the total tax money.

Politics. Kentuckians normally vote Democratic. State politicians begin their organization work around the state's 120 county courthouses. Kentucky has its most colorful election campaigns when Democrats battle among themselves for nomination in primary elections. Most of Kentucky's large towns vote strongly Democratic, and the migration of industrial workers into the state during the 1950's added to the Demo-

KENTUCKY

cratic strength. For the voting record in presidential elections since 1804, see ELECTORAL COLLEGE (table).

Kentucky's first 11 governors were either Jeffersonian Republicans or Democrats. They were followed by 26 Democrats, 6 Republicans, and 5 Whigs. Since the Civil War, the state has had only one third as many Republican governors as Democratic ones. The majority of the U.S. Senators and Representatives, as well as most of the state legislators, have been Democrats.

National Defense. Fort Knox and Fort Campbell are Kentucky's two most important military installations. Part of Fort Campbell lies in Tennessee. The army trains soldiers for armored warfare at Fort Knox. Paratroopers receive training at Fort Campbell. Other military installations include Campbell Air Force Base, Hopkinsville; United States Naval Ordnance Plant, Louisville; Bluegrass Depot, near Richmond; Louisville Medical Depot; and Lexington Signal Depot, Avon.

History

Indian Days. The Mound Builders, who lived in prehistoric times, were probably the first people to live in the Kentucky region. Remains of their villages and forts have been found in every county. They left behind them burial mounds, rock shelters, cliff dwellings, and other relics (see MOUND BUILDERS). No single Indian tribe claimed the Kentucky region when the first white settlers arrived about 1650. Both northern and southern tribes hunted in the forests. The Shawnee, Delaware, and Iroquois built Shawneetown, the state's last important Indian settlement, at the Scioto River mouth in 1729. See INDIAN, AMERICAN (table, Indian Tribes).

Exploration and Settlement. In 1634, explorers scouted the region west to the Mississippi River, and in 1736 French traders established the first settlement in Kentucky, opposite the site of Portsmouth, Ohio. The first detailed exploration of part of the Kentucky

region was led in 1750 by Thomas Walker, a pioneer scout. Daniel Boone and his exploring party entered the Kentucky Valley in 1767. Boone stayed for two years before going back to Virginia. He returned with settlers in 1773. Indians killed several members of the party, including Boone's son, and the rest returned east. James Harrod and a group of colonists from Pennsylvania arrived in 1774 and established Harrodsburg, the first permanent settlement. In 1775, Boone directed the cut-

RED-LETTER DATES IN KENTUCKY

- 1634 Explorers scouted across Kentucky to the Mississippi River.
- 1736 French traders established the first Kentucky village opposite the site of Portsmouth, Ohio.
- 1750 Thomas Walker's exploring party entered Kentucky through the Cumberland Gap.
- 1767 Daniel Boone made his first journey to Kentucky.
- 1774 Harrodsburg, the first permanent settlement, was founded.
- 1775 Boonesboro and other Kentucky settlements were established.
- 1777 Frontier leaders defended Kentucky settlements against Indian attacks during the Revolutionary War.
- 1786 Frankfort was founded.
- 1792 Kentucky became the 15th state on June 1.
- 1798 The Kentucky Resolutions declared the federal Alien and Sedition Laws unconstitutional.
- 1799 Robert Houchins discovered Mammoth Cave.
- 1817 The *Enterprise*, first steamboat to go up the Mississippi and Ohio rivers, reached Louisville from New Orleans.
- 1833 Kentucky prohibited the importation of slaves.
- 1861-65 Kentucky fought on the Union side during the Civil War.
- 1875 Aristides won the first Kentucky Derby.
- 1925 The Frontier Nursing Service was founded to care for mountain women.
- 1937 The Ohio River flooded Louisville and other cities.
- 1955 Kentucky lowered its voting-age requirement from 21 to 18.
- 1960 The state levied a 3 per cent sales tax.

HISTORIC KENTUCKY



Abraham Lincoln
born near Hodgenville

Mammoth Cave was discovered in 1799 by Robert Houchins, who was chasing a wounded bear. It has about 175 miles of passageways on five levels. Floyd Collins Crystal Cave, discovered in 1917, has more than 32 miles of passageways.



Kentucky Dam on the Tennessee River provides flood control and hydroelectric power. Built in the 1940's, it created Kentucky Lake, one of the world's largest artificial lakes.



ting of a wagon road along Warrior's Path in the central part of the state, and the construction of a fort that was later called Boonesboro.

The settlers of the Kentucky region received military help from Virginia when Indians attacked them at the opening of the Revolutionary War. Boone and George Rogers Clark defended Harrodsburg and Boonesboro from British attacks.

Kentucky became a county of Virginia in 1776. Four years later, Virginia divided it into three counties. Kentuckians began to demand statehood, but for eight years Virginia did not consent. During this period, other settlements were founded throughout the Kentucky region. Simon Kenton, a frontiersman, explored many parts of the Kentucky area. He became the best-known Kentucky frontiersman, after Daniel Boone and George Rogers Clark. Kenton fought in many Indian battles, helped establish a settlement, and became an important landowner.

Early Statehood. On June 1, 1792, Kentucky joined the Union as the 15th state. By common consent of Kentucky's leaders, General Isaac Shelby became the first governor, and Frankfort was made the capital.

Kentuckians protested strongly against the Alien and Sedition Laws passed by the government in 1798. They did not think the President should have the authority to banish or imprison any foreigner whom he thought dangerous to the country, or that fines should be imposed on those who tried to arouse discontent with the government (see ALIEN AND SEDITION ACTS). Kentuckians and Virginians replied to these laws by drawing up the Kentucky and Virginia Resolutions, which declared the Alien and Sedition Laws unconstitutional (see KENTUCKY AND VIRGINIA RESOLUTIONS).

Agricultural Development. After the War of 1812, Kentuckians turned their attention to farming and developing the state's resources. Tobacco production increased rapidly after 1825. By 1865, Kentucky ranked as the leading tobacco-producing state. Hemp was another important Kentucky crop of the 1800's. Farmers first raised it in Kentucky near Danville in 1775. From 1840 to 1870, almost all the hemp produced in the United States came from Kentucky. Rigging and cables of sailing ships were made from Kentucky hemp. The

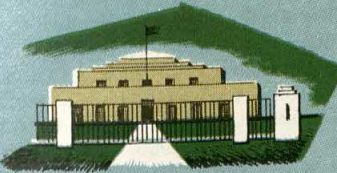
The Home of the Thoroughbred. Famous race horses have been raised in the Bluegrass Region since the 1790's. Churchill Downs, in Louisville, is the scene of the annual Kentucky Derby.



Largest Loose-Leaf Tobacco Market in the world is at Lexington. Farmers first sold hogsheads of tobacco at Lexington in 1825.



The First Permanent White Settlement in the state was established at Harrodsburg by James Harrod and colonists from Pennsylvania in 1774.



Fort Knox Gold Vault, about 30 miles south of Louisville, was built in 1936. It houses the federal government's huge gold-reserve supply.



Coal Mining Began in 1827 in the southeastern mountains. The state's first blast furnace began operating in the 1870's at Ashland.

Daniel Boone founded Boonesboro, Kentucky's second white settlement, on the Kentucky River in 1775. He led a group of colonists from North Carolina by way of the Cumberland Gap.



KENTUCKY

replacement of sailing vessels by steamships caused a rapid decline in hemp raising after 1860.

Because of a ready market down the Mississippi River at New Orleans, whisky early became an important product of the rye and corn regions of the state. Before 1860, farmers sold most Kentucky rye and corn to distillers. In the early 1800's, horse breeders recognized the superior feeding qualities of pastures in central Kentucky. This region soon became the center of Kentucky horse breeding. After the Civil War, scientific breeding methods and the increased interest in horse racing gave added encouragement to raising Thoroughbred horses. Sportsmen eager to raise Kentucky Derby winners established horse farms and stables in the Bluegrass Region.

The Civil War. Kentucky was a slave state, but it tried to remain neutral when the Civil War broke out. In May, 1861, the state legislature under Governor Beriah Magoffin announced Kentucky's neutrality. However, both sides began to recruit soldiers within the state. In the summer of 1861, the Federals were suspected of planning to seize some river positions within Kentucky. The Confederates took Columbus. Immediately afterward, General Ulysses S. Grant occupied Paducah. In September, the legislature created a military force to expel the Confederates, thus placing Kentucky on the Union side in the war.

Kentuckians were divided in loyalty during the war. Members of the same family sometimes fought each other in battle. The armies of both sides invaded the state. A Union victory in the Battle of Mill Springs in 1862 opened the way into eastern Tennessee. Other important battles were fought at Richmond and Perryville.

Progress as a State. At the end of the Civil War, Kentucky became strongly Southern in sympathy for several reasons. The government freed slaves without compensation to owners, and used Negro troops in the state. It imprisoned citizens without sufficient reason, and soldiers interfered in civil matters.

By 1889, the railroad system in Kentucky had developed enough so that the eastern coal fields could be opened. In 1894, violent resistance developed among the people of Kentucky against the continuation of the private toll-road system. This resistance soon flared into the Toll Gate War. The people did not like to pay tolls to use roads. But almost all the state's best roads had been built by private investors. Gates and gatehouses of private toll roads were destroyed. Tollkeepers were frightened away from their jobs. The state under Governor John Y. Brown was forced to take over the highway system. In 1912, the legislature created a department of public roads to oversee the road program.

Between 1890 and 1925, a complete change took place in the sale of tobacco in Kentucky. A monopoly, or group of tobacco buyers who controlled all buying, was broken up by the so-called Black Patch War of 1906-1909. Bands of night riders terrorized growers who insisted on selling to the monopoly group. Marketing conditions were finally controlled through the organization of a burley-tobacco pool. The "open-floor" auction system was begun. By supplying the market demand, the tobacco industry in the state became stabilized.

About 75,000 Kentucky men served in World War I.

Soldiers were trained at Fort Thomas, Camp Zachary Taylor, and Camp Knox.

Depression and Recovery. Kentucky farmers were hard hit by the depression years of the early 1930's. Many Kentuckians found employment in the construction of the state highway system during this period. Factories were built to make iron and steel, process agricultural goods, and pack meat products. In 1932, Camp Knox became Fort Knox, a permanent post of the United States Army. The United States Treasury established its gold vault there in 1937.

World War II. When the United States entered World War II, businessmen quickly converted Kentucky's industrial output to wartime needs. Louisville factories made shells and medical equipment, and Ashland steel was used in ships and tanks. About 325,000 Kentucky men and women served in the armed forces during World War II.

Recent Events. After the war, Kentucky kept pace with the nation's economy by greatly increasing the value of its manufactures. The government built modern airports and highways. In 1953, a huge atomic-energy plant was completed near Paducah. In 1955, Kentucky lowered the voting age from 21 to 18. During the 1950's and early 1960's, eastern Kentucky's coal mining areas suffered mass unemployment and economic depression.

Famous Kentuckians

Separate biographies are listed under the heading Kentucky in the BIOGRAPHY section of the READING AND STUDY GUIDE. Henry Clay, the statesman, represents Kentucky in Statuary Hall in the Capitol in Washington, D.C. The following short biographies include information about other noted persons who were born in Kentucky or did important work there.

Breckinridge, William Campbell Preston (1837-1904), was a lawyer, editor, soldier, and Democratic U.S. Congressman. Born in Baltimore, Md., he edited the *Lexington Observer and Reporter* from 1866 to 1868, and represented Kentucky in the U.S. House of Representatives from 1884 to 1894.

Chandler, "Happy," Albert B. (1898-), served as Democratic governor from 1935 to 1939 and as U.S. Senator from 1939 to 1948, and was re-elected governor in 1955. He was Commissioner of Baseball from 1945 to 1951. Chandler was born in Corydon.

Cooper, John Sherman (1901-), born in Somerset, was elected as a Republican to the U.S. Senate in 1946, 1952, and 1956. Each time, he filled out the unexpired term of another senator. In 1960, Cooper was elected to a six-year Senate term. After World War II, he helped reorganize the judicial system in Bavaria.

Guthrie, James (1792-1869), a railroad builder, became U.S. Secretary of the Treasury under President Franklin Pierce in 1853. Born in Bardstown, he promoted the improvement of rivers for transportation, helped develop the state's highway program, and became the chief promoter of railways in Kentucky. Called "The Father of Modern Louisville," he organized the city's public-school system and founded the University of Louisville.

Shelby, Isaac (1750-1826), was the first (1792-1796) and fifth (1812-1816) governor of Kentucky. He helped achieve the separation of Kentucky from Virginia. Shelby was a commissioner with Andrew Jackson when

Tennessee and Kentucky bought the remaining land of the Chickasaw Indians in 1818. He was born in Washington County, Maryland.

THOMAS D. CLARK. Critically reviewed by J. R. SCHWENDEMAN

Related Articles in **WORLD BOOK** include:

BIOGRAPHIES

An alphabetical list of biographies relating to Kentucky appears under the heading **Kentucky** in the **BIOGRAPHY** section of the **READING AND STUDY GUIDE**.

CITIES

Ashland	Frankfort	Louisville
Covington	Lexington	Paducah

HISTORY

Boone, Daniel	Kentucky and Virginia
Civil War	Resolutions
Clark, George Rogers	Lincoln, Abraham
Clay, Henry	Mound Builders
Colonial Life in America	Taylor, Zachary
Davis, Jefferson	Trails of Early Days

PHYSICAL FEATURES

Appalachian Mountains	Kentucky River
Cumberland Gap	Licking River
Cumberland Mountains	Mammoth Cave National Park
Cumberland River	Mississippi River
Green River	Ohio River
Kentucky Dam	Tennessee River

PRODUCTS

For Kentucky's rank among the states in production, see the following articles:

Coal	Horse	Tobacco
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UNIVERSITIES AND COLLEGES

Kentucky's colleges and universities which have separate articles in **THE WORLD BOOK ENCYCLOPEDIA** are listed in a table in the **Education** section of this article.

UNCLASSIFIED

Bluegrass	Kentucky Derby
Fluorite	Southern States
Fort Knox	Tennessee Valley Authority
Horse Racing	

Outline

- I. The Land and Its Resources**
 - A. Location and Size
 - B. Land Regions
 - C. Mountains
 - D. Rivers, Waterfalls, and Lakes
 - E. Natural Resources
 - F. The Climate
- II. Life of the People**
 - A. The People
 - B. Cities
 - C. Country Life
- III. Work of the People**
 - A. Agriculture
 - B. Manufacturing and Processing
 - C. Mining
 - D. Forest Products
 - E. Electric Power
 - F. Transportation
 - G. Communication
- IV. Education**
 - A. Schools
 - B. Libraries and Museums
- V. The Arts**
- VI. Interesting Places to Visit**
- VII. Annual Events in Kentucky**
- VIII. Government**
- IX. History**
- X. Famous Kentuckians**

Questions

- Why is Kentucky ideal for horse breeding?
- What is Kentucky's most famous natural wonder?
- Which area of Kentucky has the poorest soil?
- Why is Kentucky called a border state?
- What two Kentucky-born Presidents led the North and South in the Civil War?

KENTUCKY, UNIVERSITY OF

- What important rivers form Kentucky's borders?
- Why did Kentucky sympathize with Southerners after the Civil War?
- How does Kentucky rank as a tobacco producer?
- Who marked Kentucky's first state highway?
- What are Kentucky's most important crops?
- What is Kentucky's most important mineral?

Books for Young Readers

ANDERSON, CLARENCE W. *Big Red*. Macmillan, 1943. The story of the life of Man o' War. *Deep Through the Heart*. 1947. Profiles of 20 valiant horses. *A Touch of Greatness*. 1950. A description of 10 Thoroughbreds.

BAILEY, BERNADINE F. *Picture Book of Kentucky*. Whitman, 1955.

CHAMPION, GRACE, and KEITH, C. A. *Living in Kentucky*. Wheeler, 1950. State history and geography.

HENRY, MARGUERITE. *Born to Trot*. Rand McNally, 1950. A story of the owner and trainer of the famous trotter, Rosalind.

STUART, JESSE. *The Beatinest Boy*. McGraw, 1953. The story of young David, his grandmother, and his dog.

Books for Older Readers

BROWN, JOHN MASON. *Daniel Boone: The Opening of the Wilderness*. Random House, 1952.

CAUDILL, REBECCA. *Barrie and Daughter*. Viking, 1943. Family and community relationships in a mountain village 50 years ago. *Tree of Freedom*. 1949. A family travels from North Carolina to Kentucky in 1780. *The House of the Fifers*. Longmans, 1954. A warm picture of a farm family in western Kentucky.

CLARK, THOMAS D. *The Kentucky*. Rinehart, 1942. The history and legend of the Kentucky River. Ed.: *Bluegrass Cavalcade*. Univ. of Kentucky Press, 1956. Selections from the works of outstanding authors.

GILES, JANICE H. *The Enduring Hills*. Westminster, 1950. *Miss Willie*. 1951. Novels about life in the hill country of Kentucky.

Kentucky: A Guide to the Bluegrass State. Rev. ed. Hastings, 1954.

SKINNER, CONSTANCE L. *Pioneers of the Old Southwest*. Yale Univ. Press, 1919.

SMITH, BRADLEY. *The Horse in the Bluegrass Country*. Doubleday, 1960. An illustrated portrayal of famous horses and horse farms.

STILL, JAMES. *River of Earth*. Viking, 1940. Episodes in coal camps and mountain areas as seen through the eyes of a small boy.

STUART, JESSE. *Hie to the Hunters*. McGraw, 1950. A story of a Kentucky mountain boy. *Good Spirit of Laurel Ridge*. 1953. A Kentucky hills folk tale.

KENTUCKY, UNIVERSITY OF, is a state-supported coeducational school at Lexington, Ky. It has colleges of arts and sciences, agriculture and home economics, commerce, education, engineering, law, pharmacy, nursing, and medicine. The school also offers extension courses as well as night classes. Courses lead to all the usual graduate and undergraduate university degrees.

The Bureau of Community Service, Bureau of Business Research, Bureau of School Service, and Computing Center are on the campus. A campus radio station works with commercial stations in producing television programs. There are experimental farms at Lexington, Princeton, and Quicksand, and a forest reserve in Breathitt County.

The university library has an extensive collection of manuscripts covering Kentucky and Southern history. Founded in 1865, as Kentucky University, it took the present name in 1916. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

FRANK G. DICKEY

KENTUCKY AND VIRGINIA RESOLUTIONS

KENTUCKY AND VIRGINIA RESOLUTIONS protested against the Alien and Sedition Acts passed by Congress in 1798. The resolutions were the first to claim that a state had the right to decide whether a law of Congress was constitutional. The Virginia and Kentucky legislatures adopted them in 1798 and 1799.

Both states declared that the Alien and Sedition Acts violated the Constitution by giving the President judicial power, denying aliens the right to jury trial, and limiting freedom of speech and the press. Copies of the resolutions were sent to other states. They brought varying replies. Most states agreed that the courts alone could declare an act of Congress unconstitutional. Both Kentucky and Virginia answered the replies, and repeated their previous arguments. Kentucky asserted that it could refuse to obey any act of Congress it believed to be unconstitutional. Thomas Jefferson drew up the first Kentucky Resolution, and James Madison wrote the Virginia Resolution.

EUGENE C. BARKER

See also ALIEN AND SEDITION ACTS; STATES' RIGHTS.

KENTUCKY COLONEL is an honorary title that the governor of Kentucky awards to friends and celebrities.

KENTUCKY DAM is one of the largest of the Tennessee Valley Authority dams. This gravity-type concrete dam has a power plant with a 160,000-kilowatt capacity. The dam is 206 feet high and 8,422 feet long. Its reservoir, Kentucky Lake, covers 247 square miles on the Tennessee River in Kentucky and Tennessee. The reservoir can hold 6,002,600 acre-feet. A popular resort area stands there. See also DAM.

T. W. MERMEL

KENTUCKY DERBY is the most famous horse race in the United States. This 1 $\frac{1}{4}$ -mile event for 3-year-old horses is held annually on the first Saturday in May at Churchill Downs race track in Louisville, Ky. M. Lewis Clark founded Churchill Downs in 1875. That year, Aristides won the first Kentucky Derby. In 1902, Martin J. "Matt" Winn took over the management of Churchill Downs and built the Kentucky Derby into one of the world's outstanding races. See also HORSE RACING; LOUISVILLE (picture).

JOE AGRELLA

KENTUCKY RIVER flows through the colorful Bluegrass section of Kentucky. The river is formed in the Cumberland Mountains. From there, the Kentucky flows northwest and empties into the Ohio River at Carrollton. Its winding course carries the river through a region of limestone cliffs and green hills. A system of locks and dams makes it possible for large boats to sail about 250 miles, to Beattyville.

J. R. SCHWENDEMAN

KENTUCKY STATE COLLEGE is a coeducational liberal arts and teachers college at Frankfort, Ky. It is publicly controlled and state supported. Courses leading to the degrees of A.B. and B.S. are offered. The college was founded in 1886. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KENTUCKY STATE COLLEGE, EASTERN. See EASTERN KENTUCKY STATE COLLEGE.

KENTUCKY STATE COLLEGE, WESTERN. See WESTERN KENTUCKY STATE COLLEGE.

KENTUCKY WESLEYAN COLLEGE is a coeducational liberal arts college at Owensboro, Ky. It is under the control of the Methodist Church. Graduates receive A.B. and B.S. degrees. It was founded in 1860. For enrollment, see UNIVERSITIES AND COLLEGES (table).

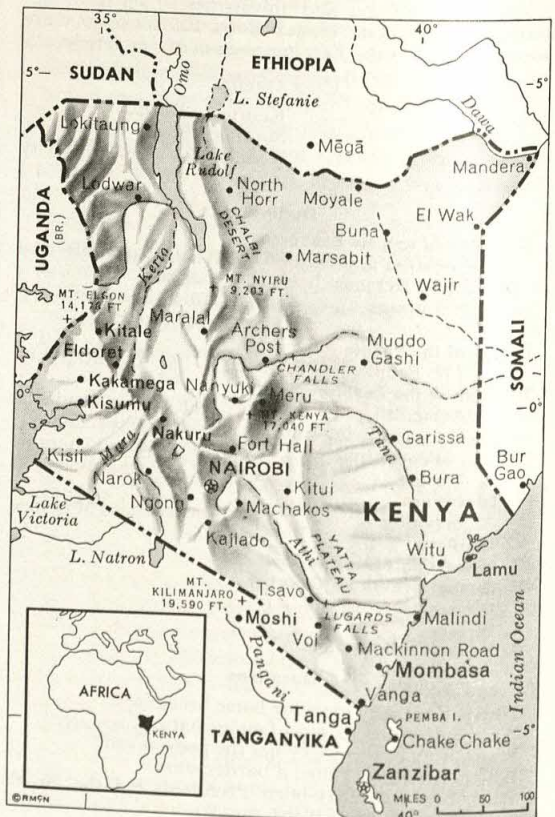
KENYA, *KEHN* yah or *KEEN* yuh, is a British colony and protectorate in East Africa. Most of the people in Kenya are Africans, but there are also small European and Asian communities of political and economic significance. Nairobi is the capital and chief city.

Location, Size, and Surface Features. The *Map* shows that Kenya lies along the Indian Ocean. It also borders on Tanganyika, Uganda, the Sudan, Ethiopia, and Somali. Kenya covers 224,960 square miles. A 10-mile-wide strip along the coast is a protectorate, leased by Great Britain from the sultan of Zanzibar.

Kenya may be divided into four geographical regions. The first is a narrow coastal strip which includes the protectorate and the port of Mombasa. Inland from the coastal strip lies a plateau which is about 100 to 150 miles wide in the south, and stretches across almost the entire territory in the north. Tangled scrub covers the plateau. The third region is a central highland area, west of the plateau in the southern part of the colony. Most of the highland region varies from 5,000 to 8,000 feet in height. The fourth region, the Nyanza Plateau, extends westward from the highland region to Lake Victoria.

Natural Resources. Most of Kenya has too little rain to be of any agricultural value. However, the highland region and the Nyanza Plateau have fertile soil and adequate rainfall. The colony lacks the mineral wealth of many other African areas. It has some deposits of soda ash, copper, gold, and graphite.

Kenya's wildlife is one of its most valuable natural resources. Such animals as elephants, giraffes, hippopotamuses, lions, and rhinoceroses roam through the





An African Woman of Kenya, above, adorns herself with wire bangles and ear decorations. Sisal plantation workers, right, separate the fibers and hang them up to dry.



British Information Services; Caterpillar Tractor Co.

colony. Big-game hunting is an important tourist attraction. The government has established a number of game preserves for the protection of Kenya's animals.

Climate. Temperatures in Kenya average 80°F. throughout the year, but are much lower in the highlands. Nairobi has an average annual temperature of 63°F. Rainfall ranges from less than 20 inches in the northern plateau to 40 to 60 inches in the central highlands.

The People. Kenya has 5,405,966 people. About three fourths of the people live in the southern part of the colony. Kenya has over 5,000,000 Africans, divided into a number of different tribes. More than half of the Africans belong to the four largest tribes, the Kikuyu, Luo, Baluhya, and Kamba. Many of the Africans live on reserves, established by the British government. About 160,000 Asians, chiefly Indians, live in Kenya. Indian merchants handle much of Kenya's retail trade. Kenya also has about 62,700 Europeans, chiefly British, and about 34,000 Arabs.

Cities. Nairobi (pop. 136,500) is the capital and most important city of Kenya. Mombasa (pop. 84,746) is the chief port. Other cities, together with their populations, include Nakuru (17,625); Kisumu (10,899); Eldoret (8,193); Kitale (6,338); Lamu (5,868); Kakamega (5,000); Nanyuki (4,090); and Malindi (3,292).

Agriculture is the chief occupation in Kenya. Products include cassava, corn, meat and dairy products, hides and skins, pineapple, sugar, wattle-bark extract (used in tanning), and wheat. Most of the coffee, sisal, and tea comes from European plantations. However, improved methods and conservation schemes, as well as

dams and irrigation, have increased African production.

Industry and Trade. Since World War II, Kenya's industrial development has increased rapidly. Nairobi and Mombasa are the chief industrial and commercial centers. Industries include brewing, processing of local products, and the manufacture of cigarettes, plastics, shoes, and textiles.

Transportation and Communication. Kenya has more than 12,000 miles of roads, and over 1,400 miles of railroads. Nairobi has an international airport. A number of other airports provide service within East Africa. Mombasa is a deep-water port. Kenya has a radiobroadcasting system.

Education. Kenya maintains separate schools for the children of different races. There are more than 3,000 schools for African children. Kenya also has schools for Arabs, Asians, and Europeans. The Royal Technical College opened in Nairobi in 1956. Many of Kenya's students attend the Makerere University College of East Africa at Kampala in Uganda.

Government. Since World War II, the British government has tried to develop a government in Kenya in which all races can participate. The governor, appointed by the British Crown, is the chief official in Kenya. His normal term of office is five years. A Council of Ministers assists him. The council includes eight British civil servants, four local Europeans, two Africans, and two Asians. The Kenya legislature includes the 16 ministers, 36 constituency members, 12 specially elected members, and 20 members appointed by the governor. The legislature has a five-year term of office. All Europeans and Asians who are 21 years of age or older may

KENYA

vote. Africans who possess prescribed qualifications may also vote. Africans who qualify on more than one count may have as many as three votes. The governor also appoints an 11-member Council of State to draw attention to legislation it considers discriminatory.

History. Arab traders settled in the coastal regions of Kenya as early as the Middle Ages. Portuguese explorers sailed along the coast in the late 1400's. They destroyed Mombasa in 1593, and built a fortress there called *Fort Jesus*, which still stands. British occupation did not begin until the late 1800's. In 1887, a private British company bought a concession of a strip of coastal land from the sultan of Zanzibar. In 1888, the company was given a royal charter as the Imperial British East Africa Company. It failed financially, and the British government declared a protectorate over its territories in 1895. Kenya was then called the *East Africa Protectorate*. Great Britain constructed a railroad from Mombasa to Kisumu in the 1890's. Because most of the railroad ran through sparsely settled or unproductive land, the protectorate had trouble finding money to run it. To bolster the economy, Great Britain began to encourage European settlement in the highlands. In 1920, all the territory except the 10-mile coastal strip was proclaimed a colony. The coastal area remained a protectorate. The entire area was renamed *Kenya* after 17,040-foot-high Mount Kenya.

African nationalism developed rapidly after World War II. The nationalists were especially opposed to the British policy of reserving about 12,000 square miles in the highlands for European settlement. The Kikuyu, who lived nearest to the "white highlands," particularly resented the land policy. A terrorist movement called *Mau Mau* broke out among the Kikuyu in 1952. The Mau Mau wanted to take over the lands of the Europeans. Late in 1952, the government arrested Jomo Kenyatta, president of the Kenya Africa Union party (KAU), and charged him with leading the rebellion. In 1953, Kenyatta was sentenced to seven years in prison.

Mau Mau terrorism continued, in spite of Kenyatta's imprisonment. From 1952 to 1956, terrorists killed 28 Asians, 32 Europeans, and more than 1,800 Africans. The security forces, made up of British troops, local Kenya forces, and the Kikuyu "Home Guard," also suffered heavy casualties. The security forces killed more than 10,000 Mau Mau terrorists.

In 1955, the government adopted a land reform plan that called for surveying and consolidating African land holdings in the Central province. Under this scheme, about 500 square miles of land was resettled, mainly by the Kikuyu. By 1956, the Mau Mau rebellion had almost entirely subsided.

Nationalists continued to ask for self-government in the late 1950's. The British revised Kenya's constitution in 1958 and 1961 to give Africans more representation in the government. A majority of the seats in the legislature were reserved for Africans for the first time in elections held in 1961. Tom Mboya and the nationalistic Kenya Africa National Union party (KANU) won a sweeping victory. This party had succeeded the party of Jomo Kenyatta.

See also LAKE VICTORIA; MAU MAU; MOMBASA; NAIROBI.

KENNETH ROBINSON

KENYA, MOUNT. See MOUNT KENYA.

KENYATTA, JOMO. See KENYA (History).

KENYON COLLEGE is an arts and sciences school for men at Gambier, Ohio. It also has a divinity school, Bexley Hall. Courses are offered in the humanities, sciences, and social and theological studies. The college was founded in 1824 by Philander Chase, first Episcopal Bishop of Ohio. Rutherford B. Hayes, 19th President of the United States, was graduated from the college in 1842. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KEOKUK, an American Indian chief. See BLACK HAWK.

KEOKUK, Iowa (pop. 16,316; alt. 505 ft.), lies at the southeastern tip of Iowa on the Mississippi River. For location, see Iowa (map). Keokuk produces starches and sirup, and rubber and steel products. Settlement began in 1820, and the city was incorporated in 1847. It is named after a Sauk Indian chief. Humorist Mark Twain worked as a printer in Keokuk in the mid-1800's. A canal was built in 1877 to bypass rapids on the Mississippi. A power dam was completed in 1913. Keokuk has a commission government. WILLIAM J. PETERSEN

See also IOWA (Interesting Places to Visit [Old Ivins House]).

KEOKUK DAM is one of the largest power dams in the middle west. It extends across the Mississippi River from Keokuk, Iowa, to Hamilton, Ill. The dam is 4,649 feet long and 53 feet high. It is made of concrete and set in a limestone river bed. The dam has 119 arches. A steel gate in each arch can be raised or lowered to regulate the height of the water above the dam. The lock through which river shipping passes is the same width as the Panama Canal locks. But it can raise boats higher than the largest Panama lock.

Fifteen hydroelectric generators produce electric power at Keokuk Dam. This power is used in St. Louis, 145 miles away, and in smaller cities in Illinois, Iowa, and Missouri. Each generator can supply 9,000 kilowatts of electricity. The dam also has two smaller auxiliary generators. Keokuk Lake, an artificial lake, can hold more than 292,000 acre-feet of water.

Before the dam was built, ships could travel on the Mississippi there only during a few weeks each year. A nearby government canal took care of some of the shipping. Now steamboats save two hours traveling time. The dam was completed in 1913. T. W. MERMEL

See also DAM.

KEPLER, JOHANNES (1571-1630), a German astronomer and mathematician, discovered three laws of planetary motion. His three laws later formed an indispensable part of the foundation of Sir Isaac Newton's discovery of universal gravitation (see ELLIPSE; GRAVITATION [Newton's Law of Gravitation]):

(1) Every planet follows an oval-shaped path, or *orbit*, around the sun, called an *ellipse*. The sun is located at one focus of the elliptical orbit.

Johannes Kepler

Brown Bros.



(2) An imaginary line from the center of the sun to the center of a planet sweeps out the same area in a given time. This means that planets move faster when they are closer to the sun.

(3) The time taken by a planet to make one complete trip around the sun is its *period*. The squares of the periods of two planets are proportional to the cubes of their mean distances from the sun.

Kepler was born at Weil, Germany, and was graduated from the University of Tübingen. He accepted an offer to teach mathematics and other subjects at the Lutheran school in Graz. But he left Graz rather than undergo compulsory conversion to Roman Catholicism. While seeking another post, he formed an association with Tycho Brahe, which shaped the rest of his life (see BRAHE, TYCHO).

Brahe, the greatest astronomical observer before the introduction of the telescope, needed an assistant, and Kepler joined him. After Brahe died, Rudolph II, the Holy Roman Emperor, appointed Kepler to be Brahe's successor as imperial mathematician.

Kepler made his most significant discoveries when he tried to find an orbit to fit all Brahe's observations of the planet Mars. Earlier astronomers thought that a planet's orbit must be a circle or a combination of circles.

But Kepler could not find a circular arrangement to agree with Brahe's observations. He realized that the orbit could not be circular, and resorted to an ellipse in his calculations. The ellipse worked, and Kepler destroyed a belief 2,000 years old.

Kepler was the earliest professional astronomer to uphold openly Copernicus' theories (see COPERNICUS, NICOLAUS). He also suggested a better combination of lenses for telescopes.

EDWARD ROSEN

KERCH, STRAIT OF. See BLACK SEA.

KERENSKY, *kuh REN skih*, **ALEXANDER FEODOROVICH** (1881-), was an early leader in the Russian Revolution of 1917. He gained fame as a lawyer defending persons whom the czarist government had accused of revolutionary activities. After the czar's downfall in March, 1917, Kerensky was the only Socialist member of the first provisional government. He became Minister of Justice, then Minister of War, and finally Premier. His government was well-meaning but indecisive about the popular demand for "peace, bread, and land." The Bolsheviks, or communists, overthrew his government on Nov. 7, 1917 (see RUSSIA [History]). Kerensky fled to Paris, and then moved to the United States in 1940. For several years, he has been a member of the staff of the Hoover Institution, where he is directing an historical project on the Russian Revolution. Alexander Kerensky was born in Simbirsk (now Ulyanovsk).

ALBERT PARRY

KÉRKIRA. See CORFU.

KERMADEC, *kur MAD ehk*, **ISLANDS**, a dependency of New Zealand, is a group of five rocky islands 600 miles north of the mainland. The islands

Alexander Kerensky U&U



have a total area of about 13 square miles. At times, small groups of people have lived on the largest, Sunday Island. The other islands are Macaulay, Curtis, Herald, and L'Espérance Rock. The British discovered the islands in 1788. In 1793, Joseph d'Entrecasteaux explored and named them Kermadec. New Zealand has a weather station on Sunday Island.

EDWIN H. BRYAN, JR.

KERMANS SHAH, *kehr MAHN SHAH* (pop. 108,484), is the capital of Kermanshah province in west-central Iran, and one of the country's largest cities. For location, see IRAN (color map). It is a trading center for a large wheat-growing area. Pipelines connect the city's petroleum refinery with oil fields near the Iraq border. Its products include beet sugar, cotton textiles, and shoes. Kermanshah was founded sometime before the A.D. 600's.

RICHARD N. FRYE

KERN, JEROME DAVID (1885-1945), was an American composer of popular music. One of his greatest and most enduring successes was the musical *Show Boat*, adapted from Edna Ferber's novel and produced in



Vandamm

Jerome Kern

1927. He wrote such songs as "Old Man River," "Only Make Believe," and "Why Do I Love You?" for the show. Other Kern song hits include "The Last Time I Saw Paris," "All the Things You Are," "The Touch of Your Hand," and "Smoke Gets in Your Eyes."

He wrote a long series of successful musical comedies, including *The Red Petticoat* (1911), *Roberta* (1933), and *Very Warm for May* (1939). He collaborated with Victor Herbert on music for *Miss 1917*. In 1920, he collaborated with Herbert again on the score of *Sally*, in which Marilyn Miller sang "Look for the Silver Lining." He composed music for *Stepping Stones* (1923), *Sunny* (1925), *Sweet Adeline* (1929), and *The Cat and the Fiddle* (1931). Kern also composed music for motion pictures, including some adapted from his Broadway musicals.

He was born in New York City. His mother taught him to play the piano. As a high school student, he wrote the music for school shows, which he also directed. He studied at the New York College of Music and in Germany. He then worked in New York City at \$7.00 a week as a pianist "song plugger" for a music publisher.

GILBERT CHASE

KERNITE. See BORAX.

KEROGEN. See OIL SHALE.

KEROSENE, also called *kerosine*, is one of the many fuel products of petroleum. In 1854, the Canadian chemist Abraham Gesner patented a distilling process for refining oil. His product was improved illuminating oil called *kerosene*. Gesner also refined the oil from coal. For this reason, kerosene was once called *coal oil*.

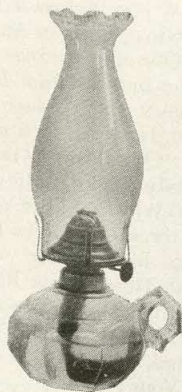
Processing Kerosene. As heat is applied, the various compounds of petroleum boil and form vapor at different temperatures. Kerosene turns to vapor between 200° and 300° C. Then it goes into a cooling tank

KERR, ALEXANDER

where it *condenses*, or turns to liquid. The condensed kerosene has many impurities in it, such as sulfur. These are removed by mixing sulfuric acid into it.

Since the acid and kerosene do not mix by themselves, air is bubbled through the acid and kerosene to make them mix. Then the mixture is allowed to settle. The acid goes to the bottom, taking many of the impurities with it, and the kerosene is drawn off. Then it is washed with water by the same bubbling process and allowed to settle. Again the kerosene is drawn off. Next, caustic soda is mixed in to remove any acid that might

The Kerosene Lamp with its tall glass chimney came into use in the mid-1800's.



Westinghouse

remain. It, too, is mixed by streams of air blown through the liquid. When it settles, the kerosene is drawn off. Many refiners give kerosene a final treatment with *doctor solution*, usually caustic soda mixed with litharge. This removes some of the odor of kerosene.

Uses. At one time, kerosene was a highly important petroleum product, because it was the chief source of light. It still supplies light and cooking fuel to areas far from electricity. Many farmers use large amounts of kerosene to run tractors and farm machines. Kerosene operates the electric generators that charge

storage batteries for individual electric plants on farms and in small villages. Kerosene also acts as a base for insect sprays, such as DDT. A mixture of kerosene and gasoline is used in jet engines. About 110,000,000 barrels of kerosene are produced in the United States each year.

See also PETROLEUM (Refining).

KERR, ALEXANDER. See CANNING (The Invention of Canning).

KERR, ROBERT S. See OKLAHOMA (Famous Oklahomans).

KERR, SOPHIE (1880-), is an American writer of short stories and novels. Her work as managing editor of *Woman's Home Companion* magazine taught her how to please the public taste with light, but always amusing, stories. Her books include *The Golden Block* (1918) and *Girl Into Woman* (1932). She wrote a play, *Big-Hearted Herbert*, with A. S. Richardson in 1934. She was born in Denton, Md.

KERVILLE, Tex. (pop. 8,901), is a tourist resort in the picturesque "Hill Country" of south-central Texas. It lies on the Guadalupe River, about 65 miles northwest of San Antonio. The high altitude of the region (1,645 to 2,500 feet) makes the climate ideal for sportsmen and vacationers. Kerville is a health resort and a leading primary market for wool and mohair. The town was founded in 1856 as the county seat of Kerr County. The city adopted the city manager form of government in 1927. Schreiner Institute, a junior college, is located in the city.

H. BAILEY CARROLL

KERRY is a breed of dairy cattle. See CATTLE (Other Dairy Cattle).

KERRY BLUE TERRIER is the national dog of Ireland. It came from County Kerry, for which it is named. It was bred to help herd sheep and cows, and to kill rats and otters. The Kerry blue stands about 18 inches high, and weighs 30 to 40 pounds. Its coat is soft and wavy. On its head it has a thick tuft, or forelock, which is usually combed down between its eyes. The dog's beard makes its muzzle appear large and long. Kerry blue puppies are born black, but become blue-gray as they grow older. See also DOG (color picture, Terriers); TERRIER.

JOSEPHINE Z. RINE

KERSEY is a thick woolen cloth used in uniforms and overcoats. It looks somewhat like broadcloth except that it has a dull finish. The yarns in kersey are woven in such a way as to have slanting upraised lines, or a *twill*. But the twill weave does not show because of the way in which the cloth is finished.

KERST, DONALD WILLIAM (1911-), an American physicist, is best known for the development of the betatron in 1940. This instrument, like the cyclotron, accelerates electrons to extremely high velocities. It is popularly called an "atom smasher" because it is used to study the nucleus of the atom.

Kerst continued his work at Los Alamos, N.Mex., during World War II. He introduced a more powerful, 300-million-electron-volt betatron in 1950 at the University of Illinois, where he was a professor of physics. Kerst was born in Galena, Ill.

ROBERT P. MUTHAUF

See also BETATRON; CYCLOTRON.

KERWIN, PATRICK (1889-), became the chief justice of the Supreme Court of Canada in 1954. He practiced law in Guelph, Ont., for 21 years. His work as a criminal lawyer led to his appointment as special prosecutor for the attorney-general's department. In 1932, he was appointed to the Supreme Court of Ontario, and, three years later, to the Supreme Court of Canada. Kerwin was born in Sarnia, Ont. J. E. HODGETTS

KESSELING, ALBERT (1885-1960), was a German field marshal of World War II. He was especially important for his aid in coordinating the use of air and ground forces. He commanded the German army in Italy, then returned to Germany at the beginning of 1945. First on the Rhine and then in southern Germany, he led the German Army in the final weeks before the collapse. He was tried for war crimes and sentenced to life imprisonment, but was released in 1952. Kesseling was born in Franconia.

LESTER B. MASON

KESTREL or **WINDHOVER** is a small bird of prey related to the falcon and the American sparrow hawk. It lives in Europe, Asia, and Africa. The adult grows 12 to 15 inches long, and has a bluish-gray color.

Kestrels kill many pests. They eat small rodents, such as field mice. They also eat insects and birds. The kestrel is sometimes called *windhover*, because it hovers in the air, heading into the wind, and beating its wings rapidly, while watching the ground for prey. The bird usually lives in nests deserted by other birds. The *lesser kestrel*, also of Europe, resembles the *common kestrel*.

Scientific Classification. Kestrels are a member of the family *Falconidae*. The common kestrel is classified as genus *Falco*, species *tinnunculus*. The lesser kestrel is *F. naumanni*.

OLIN SEWALL PETTINGILL, JR.

See also FALCON AND FALCONRY.

KETA. See SALMON (Chum Salmon).

KETCH. See SAILING (Kinds of Sailboats).

KETCHIKAN, *KECH ih KAN*, Alaska (pop. 6,483; alt. 50 ft.), is the world's largest salmon-canning center. Each year its processing plants freeze and pack millions of pounds of salmon, cod, herring, and halibut. The town lies on the southwestern shore of Revillagigedo Island, 757 miles by sea northwest of Seattle, Wash. It is the first port of call in Alaska for northbound steamers. For location, see ALASKA (color map).

Employment in fishing and fish-processing plants accounts for most of the local income. The lumber industry and a pulp mill also provide employment. Ketchikan draws on the Tongass National Forest for the largest expanse of virgin timber in North America. A modern sawmill operates near Ketchikan. At nearby Ward Cove, a large pulp mill turns out about 500 tons of high-grade pulp a day for use in making rayon and cellophane.

Ketchikan originated as an Indian fish saltery. The town grew as a supply base and port of entry for miners during the 1898 gold rush to the Klondike. The city's name comes from the Indian words *Kach Khanna*, which mean *spread wings of a prostrate eagle*. This term applied to the eagle-wing appearance of water flowing over an unusual rock formation in Ketchikan Creek. The Indian villages around Ketchikan have colorful totem pole collections. Many Indians live in the city, but most of its people are Scandinavians, attracted to the region by the fishing industry. Ketchikan has a council-manager type of government. LYMAN E. ALLEN

KETCHUP. See CATCHUP.

KETONE, *KEE tohn*, is the name of a group of chemical compounds. They contain carbon and oxygen in the carbonyl group, CO, together with two other carbon groups. They have the general formula R_2CO , where R

The Kestrel Is a Small Falcon found in Europe, Asia, and Africa. In the old days of falconry, the bird was used for hunting by the poorer classes. The name *kestrel* means a poor quality of hawk and was given in contempt.



KETTERING, CHARLES FRANKLIN

stands for the other carbon groups, called *radicals*.

Most ketones are colorless liquids that evaporate easily and smell somewhat like ether. Others, which are solids, take the form of crystals.

Ketones may be prepared from organic acids, and from alcohols containing the group $CHOH$. Gently heating such an alcohol, R_2CHOH , gives R_2CO . When the two R's are the same, the ketone is called *simple*. When they differ it is called *mixed*. The ketones are much like another group of compounds called *aldehydes*.

The different ketones have many uses in industry. Important ketones are acetone, $(CH_3)_2CO$, and camphor, $C_{15}H_{16}O$. Acetone is a solvent of fats and varnish. Camphor is a heart stimulant and is used in making celluloid.

GEORGE L. BUSH

See also ACETONE; ALDEHYDE; CAMPHOR.



General Motors Corp.

Charles F. Kettering invented the automobile self-starter, a high-compression engine, and many other industrial devices.

KETTERING, CHARLES FRANKLIN (1876-1958), was an American engineer and inventor. He developed such varied industrial products as automobile self-starters, farm lighting sets, Ethyl gasoline, quick-drying lacquer, a two-cycle diesel engine for trains, and a high-compression automobile engine. Kettering was born near Loudonville, O. Bad eyesight slowed his education, but he was graduated from Ohio State University in 1904.

His first inventive position was with the National Cash Register Company at Dayton, Ohio. He invented several accounting machines, but resigned his job to work on an idea for an automobile ignition system. The resulting invention, the self-starter, made it possible for him to organize the Charles F. Kettering Laboratories. The organization was made part of the General Motors Corporation in 1916. Kettering was named vice-president in charge of research. In 1947, he resigned to be research consultant for General Motors.

During World War II, Kettering was a military adviser, and also served as chairman of the National Inventors Council.

SMITH HEMPSTONE OLIVER

See also GUIDED MISSILE (Development); STARTER.



Brown Bros.

Francis Scott Key hastily wrote down the words of "The Star-Spangled Banner" on the back of an unfinished letter after the night-long British bombardment of Fort McHenry. He watched the shelling from a prisoner-exchange boat in Chesapeake Bay.

KETTLE HOLE is a bowl-shaped hollow in loose rocks that has been left behind by a melting glacier. When a glacier melts, large pieces of ice become separated from the main body of the glacier. These leave holes where they have rested. Most kettle holes are between 100 and 500 feet across, and between 30 and 50 feet deep. Some are much larger. A great many kettle holes are found in the northeastern part of the United States, and in southeastern Canada. Thick glaciers covered this area during the Ice Age. Many kettle holes are filled with water to make lakes. Others exist as small swamps. See also **GLACIER**.

RICHARD M. PEARL

KETTLEDRUM. See **DRUM**.

KEUKA COLLEGE is a school for women at Keuka Park, N.Y. Courses include liberal arts, education, business, science, Christian education, and nursing. Founded in 1892 as a coeducational school, it became a woman's college in 1921. For enrollment, see **UNIVERSITIES** (table).

KEW-BLAS GLASS. See **GLASSWARE**.

KEWEENAW PENINSULA. See **MICHIGAN** (Natural Resources).

KEWEENAW PERIOD. See **GEOLOGY** (table, Outline of Earth History).

KEY. See **LOCK AND KEY**.

KEY is a musical term used to tell the keynote in which a musical composition is written. A song written in the key of C has as its keynote C, the tonal center of the C scale. The key includes the tones of the staff and all the chords made from those tones. The first note of the scale is called the *keynote*, or *tonic*, and the key gets its name from the first note. Each of the twelve major and twelve minor scales has a key. *Key* also means the small finger piece that opens and closes the sound holes on wind instruments such as the clarinet. The hammers, or levers, of the piano, organ, and other keyed instruments are also called keys.

See also **SCALE**.

RAYMOND KENDALL

KEY, or **CAY**, is a low islet or reef. The Florida Keys are such islets. See also **FLORIDA** (Land Regions).

KEY, FRANCIS SCOTT (1779-1843), was a well-known Washington lawyer and amateur verse writer. He became famous for writing the words of "The Star-Spangled Banner," the national anthem of the United States. He wrote the poem during the War of 1812.

When the British retreated from Washington during the war, they took Key's friend, William Beanes, with them. Key received permission from President James Madison to intercede with the British for Beanes' release. Key boarded a prisoner-exchange boat in September, 1814. The boat was held in temporary custody by a British warship. From this exciting vantage point in the midst of the enemy, Key witnessed the British fleet's bombardment of Fort McHenry in Baltimore harbor. He watched the shelling of his countrymen with intense anxiety throughout the night. The next morning, he saw that "our flag was still there" despite the ordeal by fire. His patriotic joy inspired him to write a poem on the spot.

Key turned the text over to a Baltimore printer after being released by the British. He borrowed the tune from a then-popular English drinking song, "To Anacreon in Heaven." Congress adopted his song, "The Star-Spangled Banner," as the national anthem in 1931.

Key was born on Aug. 1, 1779, in Frederick (now Carroll) County, Maryland. He was educated at St. Johns College, Annapolis, Md. In 1801, he began to practice law in Frederick. He became district attorney of the District of Columbia in 1833. Two years later, President Andrew Jackson sent him to settle a land dispute with the Creek Indians in Alabama.

Key remained district attorney until 1841. He never took his poetry seriously, though he wrote enough to fill a collection, *Poems of the Late Francis S. Key, Esq.* (1857). Much of his poetry was religious in nature, and included the hymn, "Lord, with Glowing Heart I'd Praise Thee." At one time he was interested in becoming an Episcopal clergyman.

PETER VIERECK

See also **STAR-SPANGLED BANNER**.

KEY TO THE MEDITERRANEAN. See **GIBRALTAR**.



Florida Development Commission

Key West Lies on a Small Coral Island, Almost at the Tip of the Florida Keys.

KEY WEST, Fla. (pop. 33,956; alt. 5 ft.), is the southernmost city in the continental United States. It occupies a coral island about 100 miles southwest of the mainland (see FLORIDA [map]). Key West is a resort city, and also has a United States naval base. Before the U.S. took possession of Florida in the early 1800's, pirate crews and fishermen lived there. Many persons from the Florida mainland and the Bahamas went there after 1823, and made fortunes salvaging ships wrecked on the coral reefs. Key West became important in the 1870's for cigar making, fisheries, and food processing. In 1912, a railroad, built on trestles over the water, connected Key West to the mainland. This railroad was destroyed 100 miles north of Key West by a hurricane in 1935. An overseas highway replaced it in 1938. President Harry S. Truman spent holidays at the Key West Naval Base. Key West has a council-manager form of government.

KATHRYN ABBEY HANNA

KEY WEST NAVAL BASE, Fla., is the naval center for maintaining the antisubmarine readiness of the United States Navy. It covers 4,000 acres, and lies on Key West Island near the tip of the Florida keys. Major activities include a naval station, marine barracks, naval air station, hospital, advanced undersea weapons school, underwater swimmers school, and antisubmarine and helicopter units.

JOHN H. THOMPSON

KEYES, FRANCES PARKINSON (1885-), an American author, wrote many popular romantic novels, chiefly about New England and Louisiana. She wrote *Dinner at Antoine's* (1948), about New Orleans carnivals and society activities, and *Joy Street* (1950), a tale of a girl living on Beacon Hill in Boston. Her books on Roman Catholic saints are also notable. Mrs. Keyes was born in Charlottesville, Va. She spent her youth in Boston and Europe. She also became a well-known Washington, D.C., hostess.

HARRY R. WARFEL

KEYNES, kaynz, JOHN MAYNARD (1883-1946), **BARON KEYNES**, a British economist, was one of the most famous economists of the first half of the 1900's.

Many of his ideas were included in President Franklin D. Roosevelt's New Deal program which was instituted in the 1930's (see NEW DEAL). After World War II, Keynes' full-employment policies were accepted by several nations.

Keynes first became internationally prominent at the end of World War I, when he wrote *The Economic Consequences of the Peace* (1919), a devastating criticism of the reparations the Allies demanded of the defeated Central Powers in the Versailles peace treaty. His greatest book, *The General Theory of Employment, Interest and Money* (1936), revolutionized economic thinking. During the depression of the 1930's, Keynes said that nations should "spend their way back to prosperity." He believed that the unemployed should be put to work and that incomes should be redistributed so that the poor could spend more, and the rich save less. He was born in Cambridge.

DUDLEY DILLARD

KEYSTONE is the brick or stone at the top of an arch, which gives strength to the structure. It is put in last, and is said to lock, or *key*, the whole together. In ancient Roman architecture, builders usually carved the keystone.

See also ARCH; BRIDGE (The Arch Principle).

KEYSTONE PROVINCE. See MANITOBA.

KEYSTONE STATE. See PENNSYLVANIA.

KHACHATURIAN, kah chah TOO RYAHN, ARAM ILICH (1903?-), is a Russian composer. The folk-songs he heard as a child strongly influenced his music, which is vigorous, forthright, and brilliantly orchestrated. He wrote two symphonies, concertos for violin, cello, and piano, and the ballet *Gayne*, which includes the famous "Sabre Dance." Khachaturian was born in Tiflis (now Tbilisi). He studied music in Moscow from the age of 19, and in 1926 published his first compositions. From 1929 to 1934, he studied at the Moscow Conservatory.

HALSEY STEVENS

KHADIJA. See MOHAMMED (Early Life).

KHAFRE, or CHEPHREN. See PYRAMIDS.



The University of Khartoum, Established After World War II, Is Affiliated with the University of London. Authenticated News

KHAIR ED-DIN. See BARBAROSSA.

KHAKI, *KAK ih*, is a cotton cloth of a dust-brown color. The East Indian word *khaki* means *dust-colored*. True khaki has the diagonal, or *twill*, weave, but plain-weave cottons in dust-brown color also are called khaki. Khaki is used for play clothes, military and work uniforms, and sleeping bags.

KHAMSIN, *KAM sin*, is the name of a hot, dry wind that springs up in the Sahara, the great desert region of Africa. It blows toward Egypt for about 50 days during the spring months. *Khamsin* is the Arab word for *fifty*.

KHAN, *kahn*, or *kan*, is the word now used for *mister* in Afghanistan and other parts of Central Asia. Originally, rulers used the title, then men of high rank acquired it. Turks or Mongolians in the 500's in Central Asia were the first to use the word. Genghis Khan was perhaps the most famous person who had the title. See also GENGHIS KHAN.

KHAN, KUBLAI. See KUBLAI KHAN.

KHANGAI MOUNTAINS. See MONGOLIA (The Land).

KHARKOV, *KAHR kawf* (pop. 930,000; met. area, 1,125,000; alt. 350 ft.), is a leading machinery center of Russia. It lies near the iron and coal region of eastern Ukraine. See RUSSIA (color map).

The city's large factories turn out machinery, tractors, locomotives, and electrical equipment. Kharkov is a trading center for the grain and other farm products of the Ukraine. It is also a center of education and culture.

Kharkov, founded in the 1700's, was capital of the Ukraine until 1934, when Kiev became the capital. In World War II, Kharkov's factories were moved eastward before German forces captured the city. After the war, the industries were rebuilt.

THEODORE SHABAD

KHARTOUM, *kahr TOOM* (pop. 82,700; alt. 1,252 ft.), is the capital city of Sudan. It lies to the north on the Blue Nile River, just north of its junction with the White Nile. For location, see SUDAN (map).

The city has many modern buildings and paved, tree-lined streets. Interesting places to visit include the governor-general's palace, government offices, cathedrals, zoological gardens, colleges, and a military barracks.

Khartoum serves as a major trading and communications center in the midst of a rich cotton-growing area. Rail lines connect it with Egypt, and cargo boats ply the rivers to Red Sea ports. Egyptian Mohammed Ali conquered Sudan, and founded Khartoum in the 1820's. In 1830, Khartoum became the capital of Sudan. Mohammed Ahmed (the Mahdi) destroyed the city in 1885 in his revolt against the British, who were then occupying Egypt. British Lord Kitchener reoccupied it in 1898, and rebuilt it along modern lines. Sudan became independent in 1956. GEORGE H. T. KIMBLE

KHAYYÁM, OMAR. See OMAR KHAYYÁM.

KHEDIVE, *kuh DEEV*, was the title used by the rulers of Egypt between 1867 and 1914. *Khedive* comes from a Turkish word, *khidiv*, which means *sovereign* or *ruler*. In 1867, the sultan of Turkey gave this title to Ismail Pasha, who was then head of the Egyptian state under Turkish rule. Before that time, the ruler of Egypt had been called *wali*, or *viceroy*, a title of less dignity. The British did away with the title of *khedive* in 1914, and *sultan* was substituted. In 1922, *king* was chosen. When Egypt became a republic in 1953, it gave the title *president* to the head of state. GEORGE H. T. KIMBLE

KHINGAN MOUNTAINS. See MONGOLIA.

KHITAI. See CATHAY.

KHMER. See CAMBODIA (History).

KHRUSHCHEV, *kroosh CHAWF*, **NIKITA SERGEYEVICH** (1894-), became Premier of Russia on Mar. 27, 1958. He kept his post as First Secretary of the Communist party, and became Russia's third absolute dictator since the 1917 Revolution, following Lenin and Joseph Stalin. He also became the third man to hold both top positions in Russia at the same time. The others were Stalin, and Georgi M. Malenkov, who held both posts for less than a month in 1953 (see **LENIN**; **MALENKOV**, **GEORGI M.**; **STALIN**, **JOSEPH**).

Rise to Power. Khrushchev was comparatively unknown when Stalin died in 1953. But he followed Stalin's pattern of first winning control of the Communist party and then using that control to dominate all Russian life. He eliminated his rivals from top leadership, while he claimed to favor collective leadership and to oppose a one-man rule.

Khrushchev became first secretary after Stalin's death. As his power grew, he brought about the downfall and execution of Lavrenti Beria, head of the secret police and deputy premier after Stalin's death (see **BERIA**, **LAURENTI PAVLOVITCH**). In February, 1955, Khrushchev demoted Malenkov from the premiership.

In June, 1957, Malenkov, Vyacheslav M. Molotov, and Lazar M. Kaganovich, all deputy premiers and high officials under Stalin, tried to oust Khrushchev because they disagreed with his policies. With the backing of Marshal Georgi K. Zhukov, Minister of Defense, Khrushchev rallied enough support in the Central Committee to turn the tables on the rebel leaders. Malenkov, Molotov, and Kaganovich lost their positions as deputy premiers. They were denounced for their "antiparty" views and accused of opposing Khrushchev's policies of more aid to the farmers, decentralization of industrial management, and peaceful coexistence and cultural relations with other nations. Khrushchev exiled the dismissed leaders to minor positions where they had little authority. Malenkov became the manager of a hydroelectric plant in a remote part of Central Asia. Molotov was sent to Outer Mongolia. Kaganovich and a fourth victim of the purge, Dmitri T. Shepilov, former foreign

KHRUSHCHEV, NIKITA S.

minister, were sent to other remote spots.

In October, 1957, Khrushchev removed Marshal Zhukov from his post as Minister of Defense and from his positions in the Presidium and the Central Committee. He charged Zhukov with encouraging a personality cult built around himself and with opposing party supremacy over the armed forces. In 1958, Khrushchev demoted Nikolai Bulganin, whom he had replaced as premier, to a minor post.

His Policies. To win the favor of the Russian people, Khrushchev relaxed the policy of terror, for which he blamed Stalin in his famous "de-Stalinization" speech of February, 1956. But when the Hungarians, made bold by this relaxation, revolted against the Russians in October, 1956, Khrushchev sent his troops and cruelly stamped out the revolt (see **HUNGARY** [Communist Hungary]). Khrushchev stopped criticizing Stalin. He continued Stalin's policy of aggression abroad, but he used a shrewd pretense of wanting peace.

Khrushchev's clever diplomacy gained a foothold for Russia in the Middle East, an accomplishment that neither the czars nor Stalin had achieved. He encouraged Russian scientists, who in 1957 produced two man-made satellites and made other technological advances in rocketry (see **SPACE TRAVEL**; **SPUTNIK**).

He has been pictured as a jovial man, quick to attend parties, to mingle with people, and to make unprepared, often tactless, speeches. But his mind has been described as shrewd and calculating.

His Early Life. Khrushchev was born in Kursk province in central Russia. His early life was spent in poverty, and he had little, if any, formal education. He worked as a shepherd, a miner, and a plumber. He joined the army and the Communist party in 1918. In the 1920's, he began to rise in party posts. On Stalin's orders, he organized purges in the Ukraine, where he served as the Communist party leader from 1938 to 1949. During World War II, he was a lieutenant general in the Russian Army.

ALBERT PARRY

Wide World

Nikita S. Khrushchev rose through the ranks of the Communist party to become the most powerful man in Russia. He became Premier in March, 1958, controlling both the Russian government and the Russian Communist party.



KHUFU

KHUFU, *KOO foo*, or **CHEOPS**, *KEE ahps*, was the builder of the famous Great Pyramid at Gizeh (now El Giza), Egypt. He was the second king of the fourth, or Memphite, dynasty, and ruled about 2700-2677 B.C. Herodotus, the Greek historian who visited Egypt about 2,300 years after Khufu's time, described him as a tyrant. But Egyptian evidence shows that his memory was honored for a long time. Building the Great Pyramid is said to have taken 20 years and the labor of 100,000 men. In 1954, on the south side of the Great Pyramid, archaeologists uncovered a gigantic ship, which Khufu had built and richly equipped for an unknown purpose. See also **CARTOUCHE** (picture, The Cartouche of Khufu); **PYRAMIDS** (Great Pyramid).

KEITH C. SEELE

KHYBER, *KI bur*, **PASS** is one of the most famous mountain passes in the world. It connects the northern frontier of West Pakistan with Afghanistan. For location, see **INDIA** (color map). This pass provides the easiest route between the Indian peninsula and Afghanistan. It was an important military point for hundreds of years. Before the partition of India, the British said that there could be no land invasion of Britain's rich Indian empire as long as the Khyber Pass was successfully defended. The pass is 33 miles long and only 10 feet wide at its narrowest point.

Villages lie on either side of the pass. Each family has its own little fortress and watch tower, because feuds are common among hill tribes. Armed police protect travelers from bandits. A railway was completed to the head of the pass in 1925.

J. E. SPENCER

KIBBUTZ. See **ISRAEL** (Agriculture).

KIBO. See **KILIMANJARO**.

KID. See **GOAT**.

KIDD, WILLIAM (1645?-1701), a famous Scottish pirate, first worked as a respectable New York trader and sea captain. In 1695, King William III of England commissioned him a *privateer* (captain of an armed ship) to capture certain notorious pirates and seize their stolen goods. Kidd sailed from London in 1696 with a new ship and a hand-picked crew. But an English warship

Khyber Pass in Northern Pakistan links that country with Afghanistan. It is a wild, rugged, and picturesque area which has been important in history since the days of Alexander the



Brown Bros.

Captain William Kidd and His Men supposedly buried stolen treasure. But no fabulous wealth has ever been found.

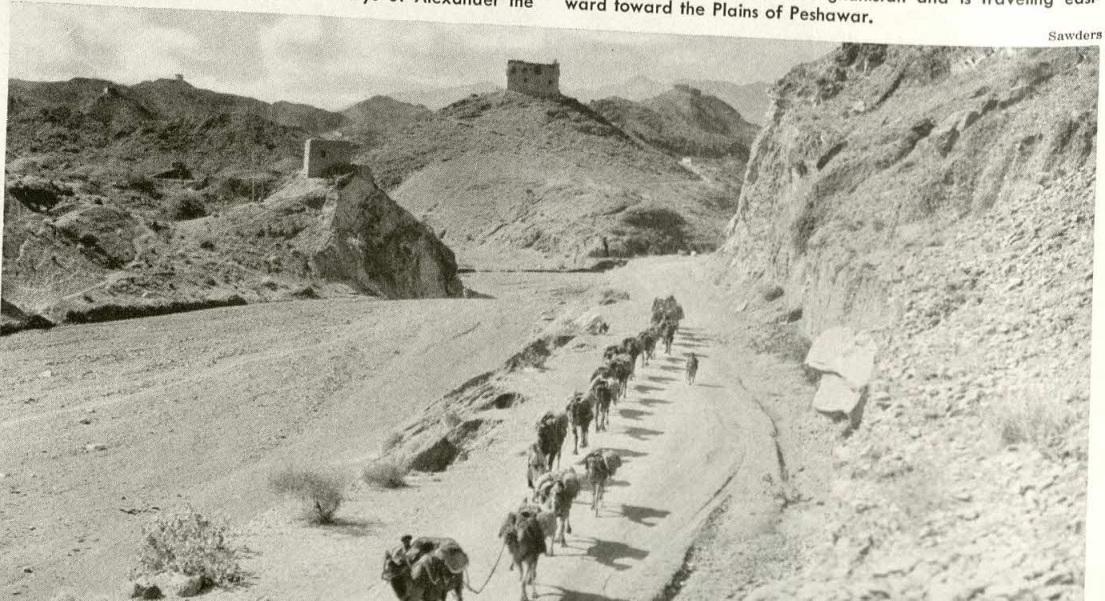
took some of his crew, and he had to recruit more men in pirate-infested New York.

Kidd left New York in September, 1696, and sailed across the Atlantic Ocean. He attacked a merchant fleet off the east coast of Africa. His seizure of two rich ships sailing under French commissions, or *passes*, was lawful because England was at war with France. He refused the demands of his ill-tempered crew to attack other ships. But he captured no pirates. Instead, he went to Madagascar, where he made friends with the pirates he had been sent to take.

Many of his men left him, and Kidd returned with one of the ships to the West Indies. There, he learned he had been declared a pirate. He sailed north and left

Great. The heavily laden camel caravan which is shown in this photograph has come from Afghanistan and is traveling eastward toward the Plains of Peshawar.

Sawdors



gold, silver, and Indian goods with the Gardiner family on Gardiner's Island, N.Y. The English government seized this treasure, and Kidd was arrested when he landed at Boston. He was sent to England to be tried for five acts of piracy and for the murder of his gunner, William Moore. Kidd was not allowed to have legal advice, and he could not use his personal papers. He was found guilty and hanged.

Tales and legends quickly grew up about Kidd's supposed buried treasure and bloody deeds. "The Ballad of Captain Kidd" was sung around the world. Many fiction writers, including Washington Irving, Edgar Allan Poe, and Robert Louis Stevenson have used this legend. The most famous stories are Poe's *The Gold Bug* and Stevenson's *Treasure Island*.

WILLARD H. BONNER

KIDNAPING is the act of seizing a person and holding him against his will. The word *kidnap* comes from the two slang words *kid*, or *child*, and *nab*, which means to *steal*. At one time kidnaping referred especially to stealing children. But the word has come to be used also in cases where adults are seized and held.

Slaves were often kidnaped and sold in the slave market. Sailors were *shanghaied*, or kidnaped and forced to work on ships. During the early 1800's, ships were occasionally stopped and entire crews *impressed*, or forced to work on other ships. An illegal arrest is actually a form of kidnaping. Fleeing criminals often kidnap one or more persons and hold them as *hostages* to reduce the chance of being captured. The kidnaping of a woman is sometimes referred to as *abduction*, which may be a separate crime.

Bandits in almost every country have used kidnaping as a way of raising money. They hold the victim until his family or friends pay a *ransom*, or reward, for his return. Most countries have laws that punish kidnaping severely. In some states of the United States, kidnaping is a crime punishable by death.

Kidnaping for ransom became common in the United States during the 1920's and 1930's. After Charles A. Lindbergh's son was kidnaped and killed in 1932, Congress passed the "Lindbergh Law." This law makes kidnaping a federal crime if the victim is taken out of the state. In 1956, Congress changed the law to allow agents of the Federal Bureau of Investigation to work on any kidnap case after 24 hours.

FRED E. INBAU

See also HOSTAGE; RANSOM.

KIDNEY, *KID nih*, is the name of two large glands located in the small of the back, one on either side of the backbone. Their function is to separate urea and other waste materials from the blood. This waste is excreted from the body in the form of *urine*. The kidneys form a part of the excretory system of the body.

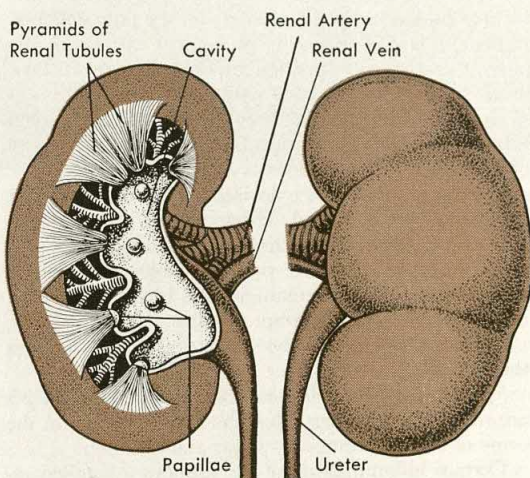
These important organs are shaped much like large beans. The concave or hollow side faces toward the inside. They are purplish brown. The human kidney is about 4 inches long, 2½ inches wide, and 1½ inches thick. It extends down from the 11th rib to the highest point of the hip bone. The right kidney lies a little lower than the left, to make room for the liver.

How the Kidneys Work. Blood, carried to the kidneys through the *renal artery*, returns to the heart through the *renal vein* and the lower *vena cava*. Two small tubes, the *ureters*, carry the waste matter from the kidneys to the bladder. Each kidney has a ureter about as large as the quill of a crow's feather. The *bladder* is a large oval

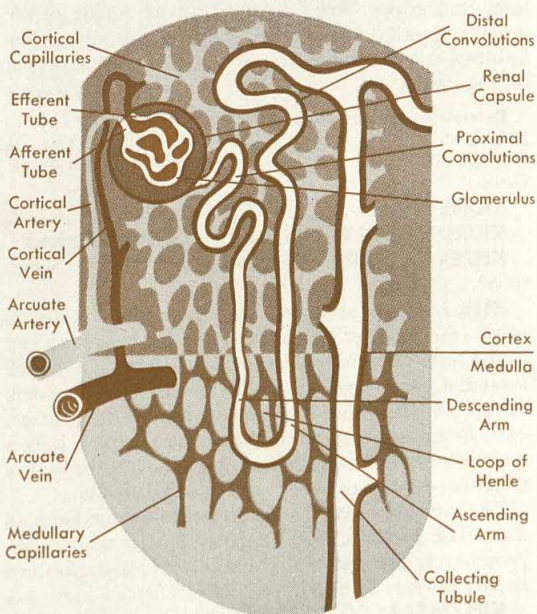
pouch lying low in the pelvis. The bladder expels urine through the *urethra*.

Each kidney contains a network of tiny blood vessels twined around millions of kidney tubes. These tiny vessels withdraw waste products from the blood. The diagram shows a kidney unit called a *nephron*. A million or more of these units form part of each kidney. Both kidneys have a filtering surface of slightly over one square yard.

In a single day, the kidneys give off and take back about a half pound of sugar and three ounces of table salt from the blood. In the average day, the kidneys give off about a quart and a half of urine. The kidneys do most of their work during the day.



The Kidney, above, removes urine and other waste products from the blood. About a million tiny coiled tubes, called *nephrons*, below, filter out wastes and pass them to the ureters.



KIDNEY BEAN

The *glomerulus*, a filtering device, lies at the top of the nephron. It is made up of a tuft of tiny blood vessels called *capillaries*. Blood enters the glomerulus through the afferent artery and leaves through the efferent artery. After the blood leaves, it passes through capillaries which surround the cells in the tubules. Water, urea, glucose, salt, and other substances are filtered from the blood in the glomerulus, into *Bowman's space*, the cavity that opens into the renal tubule.

Diseases of the Kidneys. The kidneys play an important part in diseases of modern society. They affect the heart and blood vessels. For example, when the flow of blood to the kidneys is reduced, the blood pressure increases.

The kidneys, however, are among those organs which seem to provide a margin of safety for the human being. If one kidney is removed by surgical operation, the patient can usually function much as before. In fact, many individuals are born with only one kidney.

Anything that interferes with the work of the kidneys is likely to cause poisons to collect in the body. Because of this, diseases of the kidneys are serious.

Various tests have been devised to determine whether the kidneys are damaged. Those used by physicians today include tests which determine the following:

(1) Whether any waste products which the kidneys should be excreting remain in the blood. Urea and acids are the most important of these.

(2) Whether the kidneys excrete as much fluid as they should.

(3) Whether the urine excreted is normal. Doctors use many chemical tests that show the presence in the urine of such substances as sugar and albumin.

Certain inflammations of the kidneys are called *nephritis*, or Bright's disease. The causes of this disease are not well known. The germs of various infectious diseases are an important source of kidney trouble. These diseases include scarlet and typhoid fevers, tuberculosis, and grippe. Arteriosclerosis, or hardening of the arteries, produces one type of kidney trouble. The habitual use of alcohol may also have a harmful effect on the kidney.

ANDREW CONWAY IVY

Related Articles in WORLD BOOK include:

Bladder	Nephritis	Uremia
Elimination	Urea	Urine
Gout		

KIDNEY BEAN. See BEAN (Kinds of Beans).

KIDRON, VALLEY OF. See JERUSALEM (Location).

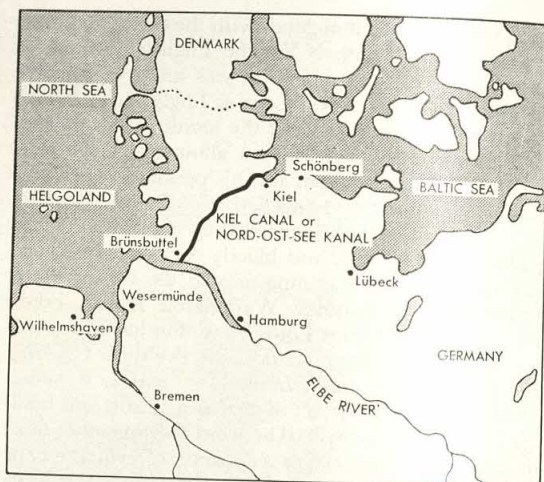
KIEFER, ADOLPH. See SWIMMING (Famous Swimmers).

KIEL, *keel* (pop. about 259,500), is a trading and shipping center in West Germany. It lies at the eastern end of the Kiel, or Kaiser Wilhelm, Canal. The city is well located to carry on shipping with Denmark and Sweden. Cargoes shipped from Kiel include beer, butter, cheese, coal, flour, and fish. Shipbuilding has been an important industry in Kiel for many years. Kiel is the seat of Christian-Albrechts University, founded in 1665.

The city has served as headquarters for the German fleet. For location, see GERMANY (color map). Approaches to the port and canal were strongly fortified in World Wars I and II.

JAMES K. POLLOCK

KIEL, TREATY OF. See NORWAY (Union with Sweden).



The Kiel Canal (Nord-Ost-See Kanal), a famous waterway, connects the North Sea with the Baltic Sea.

KIEL, *keel*, **CANAL** is a waterway that provides a short cut for ships sailing between the North Sea and the Baltic Sea. It is sometimes called the Kaiser Wilhelm Canal. It shortens the trip around the Denmark peninsula by more than 300 miles. The canal lies in northwestern Germany. It leads from Brunsbüttelkoog at the mouth of the Elbe River to Holtenau near Kiel, the Baltic seaport after which the canal was named. A high railroad bridge crosses the canal at Rendsburg. For location, see GERMANY (color map).

The Kiel Canal was begun by the German government in 1887 and completed in 1895. The canal has been enlarged since, and is now 335 feet wide and 37 feet deep. Allied bombs damaged the waterway during World War II. More than 50,000 ships pass through the canal in a single year.

FRANK O. AHNERT

KIEPURA, *kee PYU rah*, **JAN** (1902?-), a Polish tenor, won fame in opera and motion pictures. He made his debut in the title role of Charles Gounod's *Faust* in 1925. He became known as "the Polish Caruso," and sang in the world's leading opera houses. He appeared in later years in revivals of Franz Lehár's *The Merry Widow*, with his wife, Marta Eggerth. Kiepura was born in Sosnowiec, Poland, and was graduated from Warsaw University.

MARTIAL SINGER

KIERKEGAARD, *KIHR kuh gawr*, **SØREN AABY** (1813-1855), was a Danish philosopher and Protestant theologian. Many now accept him as the forerunner of religious existentialism (see EXISTENTIALISM). He influenced theological opinion in the United States. He held that God can be known only through faith, and not through reason. His chief works include *Either—Or* (1843), *The Concept of Dread* (1844), *Stages on Life's Way* (1845), and *On Christian Training* (1850). Kierkegaard was born in Copenhagen.

EUGENE T. ADAMS

KIESELGUHR. See DYNAMITE.

KIEV, *KEE yuf*, or **KIYEV** (pop. 1,102,000), is one of the largest cities in Russia, and the capital of the Ukrainian S.S.R. The city lies on the Dnepr River, in a region rich with farms and industries. Kiev is an important railroad center and has many factories. It also serves as a cultural center, with laboratories, technical schools, museums, a university, a National Library, and



Ewing Galloway

Kilauea in Hawaii National Park sends clouds of steam skyward from its bubbling lava pit. Kilauea lies on the eastern slope of Mauna Loa. The surface around the crater has been

paved by hardened lava left from many volcanic eruptions. At the top of the picture is a winding automobile road leading to the parking space seen below the smoking crater.

an Academy of Sciences located there.

Kiev is known as one of the most beautiful Soviet cities. The old section of the city, once strongly fortified, stands high on a cliff overlooking the Dnepr. The business section stretches along the river. Kiev was the ancient capital of Russia. It then had 150 churches and was called "Holy Kiev." Kiev was the site of Russia's first Christian church, the Church of St. Elias, built before A.D. 944. Kiev also had Russia's first Christian bishop, first Christian school, and first library.

The city was founded in 862. It was held by Mongols, Lithuanians, and Poles at various times, but became a part of Russia again in 1668. Kiev became the capital of the Ukraine in 1934. The city, heavily damaged by German forces in World War II, was rebuilt after the Germans were defeated. In 1960, Kiev completed a new subway and a sports arena seating 15,000 persons. For location, see RUSSIA (color map). THEODORE SHABAD

KIKUYU. See KENYA.

KILAUEA, *KEE lou AY ah*, is a volcano on the island of Hawaii. Its crater, or *caldera*, is $2\frac{1}{2}$ miles long, 2 miles wide, and 400 feet deep at its deepest point. Its highest rim rises to an elevation of 4,090 feet. The volcano lies in Hawaii National Park on the eastern slope of a larger volcano, Mauna Loa.

Halemaumau crater, about one-half mile wide, lies within the caldera. From 1823 to 1924, Halemaumau contained an active lake of bubbling molten lava. In 1924, the lake sank out of sight and violent steam explosions took place. Between then and 1954, nine short eruptions occurred in Halemaumau.

In 1955, Kilauea erupted from fissures 20 miles east of the crater, throwing great lava fountains 800 feet high. But all persons in the area endangered by the eruption moved to safety. GORDON A. MACDONALD

See also HAWAII (color picture, Volcanic Eruptions); HAWAII NATIONAL PARK; VOLCANO.

KILE FALLS, or KILEFOS, in southwestern Norway is the highest perpendicular waterfall in the country. The water of the Naerøylfjord plunges over ledges in the Naerödal Mountains from a height of 1,800 feet to form Kile Falls. The falls can be seen best in the spring, when the mountain snow is melting. In the summer, the wind blows the water into a spray.

KILIMANJARO, *KIL ee mun JAH roh*, is an extinct East African volcano with two peaks. It lies in the northern part of Tanganyika, near the Kenya border. One peak, Kibo (19,590 feet), is the highest point on the African continent. The crater of Kibo peak is about 600 feet deep and is filled with snow and ice, forming the Credner glacier. After a wet season, the capping of snow and ice continues down the mountainside to about 16,000 feet. Mawenzi (17,564 feet) is the other peak of Kilimanjaro. Kilimanjaro provides the setting of "The Snows of Kilimanjaro," a well-known short story by Ernest Hemingway. S. JAMES SHAND

See also MOUNTAIN (color picture, Mountains of the World); TANGANYIKA (picture).

KILL DEVIL HILL, near Kitty Hawk, N.C., is the site of the Wright Brothers National Memorial, commemorating the first flight in a power-driven airplane. The 324-acre site for the memorial was established in 1927. See NORTH CAROLINA (color map); WRIGHT BROTHERS.

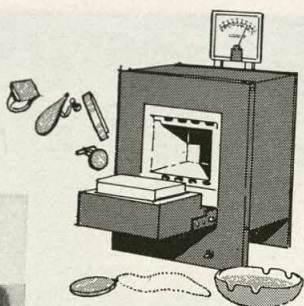
KILLARNEY, *kih LAHR nih* (pop. 6,298; alt. 210 ft.), is a small market town in southwestern Ireland. See IRELAND (map). Farmers sell cattle, pigs, and sheep at its monthly fairs. The town produces woodwork, woolen goods, and shoes and boots. During the summer, it becomes an important tourist center, noted for its scenic beauty and mild climate. Killarney is the site of a Roman Catholic cathedral built in 1846. The three Lakes of Killarney lie surrounded by wooded mountains of the nearby national park. T. W. FREEMAN

KILLARNEY, LAKES OF. See LAKES OF KILLARNEY.

KILNS



Rie Gaddis



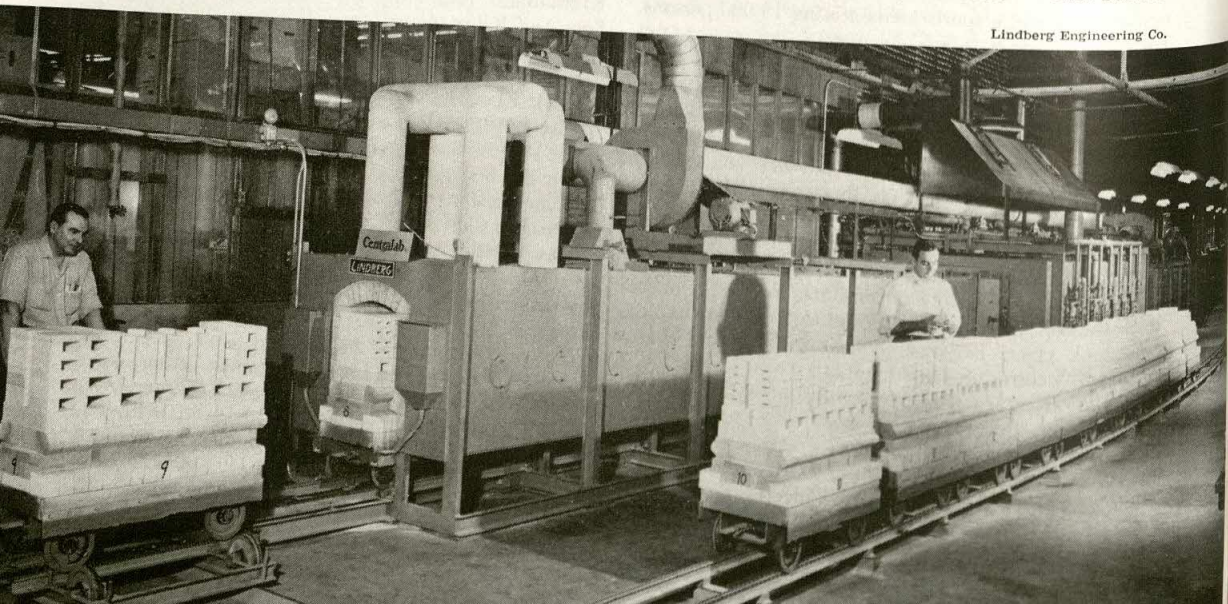
An Electric Kiln preheated to a temperature from 1,300°F. to 1,500°F. is used for enameling metals, above. The articles remain in this kiln only 3 minutes. Clay dishes and other pottery, left, must be fired, or baked, in a kiln for several days until they dry.



Ceramic Industry

The Glazed Dishes, left, are ready to enter the kiln for firing. Each piece rests on stilts so that the glaze will not stick to the kiln floor during the firing process.

Bricks pass through a continuous tunnel kiln on small rail cars, below. The temperature reaches its highest firing point at the center of the tunnel. The bricks gradually heat up as they near the center and cool as they near the exit.



Linberg Engineering Co.

KILLDEER is the best-known *plover*, or shore-inhabiting bird, in North America. It ranges from northern Canada to South America. The killdeer's name comes from its piercing call, which seems to say *killdeer*. The bird, about 10 inches long, has a grayish-brown back and white banded breast. Killdeers are wading birds, but they often build nests in fields or near houses. Killdeers eat insects harmful to crops.

Scientific Classification. The killdeer belongs to the family *Charadriidae*. It is genus *Charadrius*, species *vociferus*, subspecies *vociferus*.

LEON A. HAUSMAN

See also **BRD** (How Birds Protect Themselves; color pictures, Color Protects Them; Bird Nests; Types of Feet); **POVER**.

KILLER WHALE is probably the most savage, ferocious animal on land or sea. Killer whales hunt in packs and attack anything that swims. A killer whale measures 20 to 35 feet in length. A white area on the black body, an enormous dorsal (back) fin, and heavy teeth distinguish the killer whale.

Scientific Classification. The Atlantic killer is genus *Grampus*, species *orca*. The Pacific killer is classified as *G. rectipinna*.

ROY CHAPMAN ANDREWS

See also **WHALE** (picture).

KILMER, JOYCE (1886-1918), was an American poet and journalist. He is known best for his sentimental poem, "Trees," but his lesser-known poems probably have more serious merit.

Born at New Brunswick, N.J., on Dec. 6, 1886, Kilmer was educated at Rutgers College (now Rutgers University) and Columbia University. He worked as a journalist for the *New York Times*. He was killed in France in World War I during an heroic attack on a German machine-gun nest.

PETER VIERECK

KILN, *kill*, or *kiln*, is a furnace used to dry, cure, harden, or melt materials. Temperatures of more than 3,200°F. can be achieved in kilns. Temperatures of about 500°F. to 1,000°F. are needed to dry lumber, harden paints, and cure and harden plastics. Those over 1,000°F. melt glass, enamel metals, set glazes, and fire clays. There are two types of kilns. The *periodic* kiln is heated and cooled at intervals. The *continuous*, or *tunnel*, kiln is fired continuously. See also **BRICK** AND **BRICK-LAYING** (Kilns); **PORCELAIN**; **POTTERY**.

PAUL BOGATAY

KILO is a prefix meaning thousand. It appears chiefly in the names of units in the metric system as in *kilogram*, meaning 1,000 grams. Kilo is sometimes used as a shortened or abbreviated form of kilogram or kilometer. See also **KILOGRAM**; **KILOMETER**.

KILOCYCLE, *KIL oh sy k'l*, in radio, is short for kilocycle per second, the unit of frequency of radio waves. A kilocycle is 1,000 cycles. Radio stations which send out radio waves each have different frequencies assigned by the Federal Communications Commission, so they will not interfere with one another. The receiving set can be adjusted to receive waves of various frequencies and can select stations. If a radio station has a frequency of 710,000 cycles per second, its frequency band is 710 kilocycles. Therefore, the listener turns his radio dial to 710 (sometimes 71) to tune in the station.

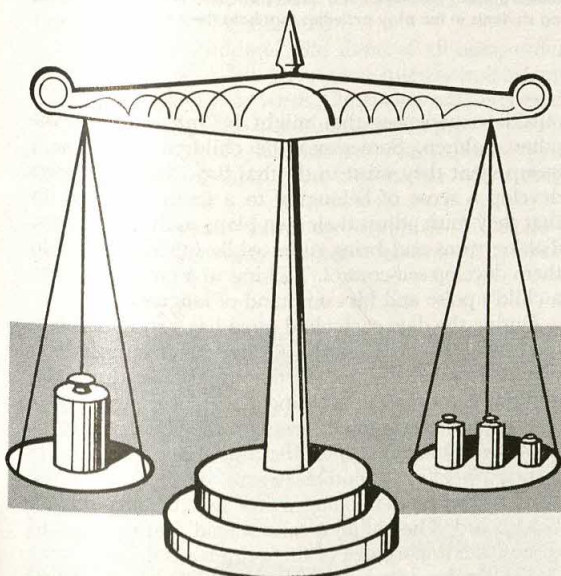
D. D. EWING

See also **WAVE BAND**; **SHORT WAVE**.

KILOGRAM, *KIL oh gram*, is a unit of mass and weight in the metric system. It equals 1,000 grams, or about 2.2 pounds. As a unit of mass, it has the mass of 1,000 cubic centimeters of water at 39.2° F. As a unit of force (weight), it is the gravitational force acting on a body with a mass of one kilogram.

E. G. STRAUS

See also **GRAM**; **KILOGRAM-METER**; **METRIC SYSTEM**.



1 kilogram = 2.2046 pounds

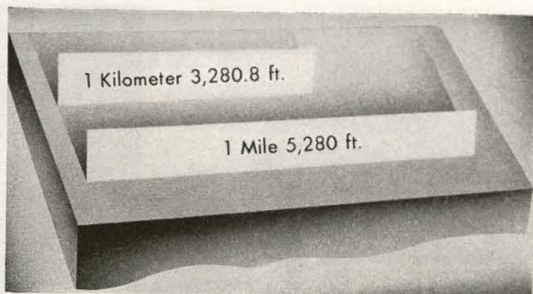
KILOGRAM-METER is a unit of energy in the metric system. One kilogram-meter is the amount of work done in lifting one kilogram of matter a distance of one meter. A kilogram is about 2.2 pounds. A meter is about 39½ inches. One kilogram-meter equals about 7.233 foot-pounds.

E. G. STRAUS

See also **FOOT-POUND**; **KILOGRAM**; **METRIC SYSTEM**.

KILOLITER. See **METRIC SYSTEM**.

KILOMETER, *KIL oh ME tur*, is a unit of distance in the metric system. One kilometer equals 1,000 meters, or about 1,090 yards. It equals about five eighths of a mile. The term was formerly used in Canada and the United States mostly for scientific writing. Today, more and more people use it in ordinary writing. The word came to be used in English-speaking countries more often



The Comparative Distance of a Mile and a Kilometer. Kilometer means 1,000 meters. One kilometer is equal to about five eighths of a United States statute mile.

after World War I ended. See also **METRIC SYSTEM**; **MILE**.

E. G. STRAUS

KILOWATT, *KIL oh WAHT*, is a unit of electric power. It is used in all countries, including those that usually do not use the metric system. One kilowatt equals 1,000 watts, or 1.34 horsepower. A *watt* is the power carried by a current of one ampere flowing under an electrical pressure of one volt. Horsepower can be used in the English system, but because one horsepower equals only 746 watts, the larger unit of 1,000 watts is preferred.

A kilowatt-hour equals the work done by one kilowatt in one hour. One kilowatt-hour equals about 1.34 horsepower hours.

Many engineers would like to have the kilowatt used instead of horsepower for measuring mechanical as well as electrical work. Horsepower is a unit that has no relation to other units, but kilowatt has a relation to other standards in the metric system used by scientists in all countries.

E. G. STRAUS

See also **AMPERE**; **HORSEPOWER**; **METRIC SYSTEM**; **VOLT**; **WATT**.

KILPATRICK, WILLIAM HEARD (1871-), became one of the leading educational philosophers of the 1900's. He won fame as a teacher, writer, and lecturer at Teachers College, Columbia University, where he served for 28 years. He led in favoring experimental educational practice, especially the use of projects and activities in teaching. Kilpatrick was born at White Plains, Ga., and was graduated from Mercer University. After teaching in elementary and secondary schools, Kilpatrick became a professor of mathematics at Mercer University.

GALEN SAYLOR

KILT. See **SCOTLAND** (Way of Life; picture).

KIMBERLEY, *KIM bur lih* (pop. 58,771; alt. 3,926 ft.), a city in South Africa, is one of the world's most important diamond centers. It lies 647 miles northeast of Cape Town in Cape of Good Hope province. For location, see **SOUTH AFRICA** (color map).

Some of the world's largest diamond mines lie near Kimberley. Until 1908, they produced most of the world's diamonds. Factories in Kimberley cut and polish diamonds. Other nearby mines supply asbestos, manganese, and gypsum. Prospectors founded Kimberley in 1871. In the Boer War, Boer forces besieged Kimberley for 123 days. British forces relieved the city in February, 1900.

HIBBERD V. B. KLINE, JR.

KIMMEL, HUSBAND EDWARD. See **WORLD WAR II** (The Attack on Pearl Harbor).

KIMONO. See **JAPAN** (Ways of Life).

KIN, NEXT OF. See **NEXT OF KIN**.



Jack Rosen, Pix; *The Instructor*

Kindergarten Opens the Door to Fun and Learning before children enter the first grade. Kindergarten teachers need skill, patience, and understanding to guide their young students in the play activities that help them learn.

KINDERGARTEN is the school grade that comes before the first grade. A kindergarten group is usually made up of 5-year-olds, because most schools do not accept children in first grade until they are 6. Kindergarten children learn by spending several hours daily with an experienced teacher who helps them to learn through various activities, including play. The German educator Friedrich Froebel coined the word *kindergarten* in the early 1800's. It comes from two German words that mean *children's garden*.

About 40 per cent of the 5-year-olds in the United States are enrolled in public-school kindergartens. Another 8 per cent attend private kindergartens. But more than half of the 5-year-olds must wait until they are 6 to begin school, because not all public schools have kindergartens. About the same percentage of children attend kindergarten in Canada, as in the United States.

Most educators believe that all children should attend kindergarten. They believe that 5-year-old boys and girls are ready to learn as part of a group, and that kindergarten prepares them to learn better in first grade.

Kindergarten Activities

Five-year-olds are full of ideas. In a kindergarten they are generally free to talk with each other, and the room is busy and often noisy. The children also express their ideas with paints, crayons, clay, and other creative materials.

Group Activities are one of the major contributions of the kindergarten. Children learn to work with other persons. This helps prepare them for future schoolwork and for life.

Kindergarten days often begin with a discussion time. This period gives each child a chance to report any

outside experiences that might be interesting to the other children. Sometimes the children decide as a group what they want to do that day. The youngsters develop a sense of belonging to a group. They learn that they must adjust their own plans to those of others. Taking turns and being quiet while others speak help them develop self-control. Talking to a group increases a child's poise and his command of language.

During the day, each child often has a special assignment that he does for the group. For example, one waters the plants. Two others may arrange the tables and chairs for the midmorning snack. One group cares for the pets, and another arranges the cots or mats for nap-time. One child takes the attendance book to the principal's office. Another sweeps the floor after the snack. The teacher often writes assignments on the blackboard. The children cannot read, but they get an idea of the importance of the written word.

The teacher tries to encourage the personality development of each child in both individual and group activities. She does not tell him how each job should be done. Instead, she tries to guide him so that he works in his own way, to the best of his abilities. As a result, the child learns to think through his problems.

A typical group activity for kindergarten children is exploring the immediate surroundings of their school and neighborhood. They take trips through the school building and visit the boiler room, the kitchen, the principal's office, the nurse's office, and other special rooms. They go outside to look at birds, flowers, and trees. They may visit a grocery store, fire station, post office, railroad station, or farm.

A trip to the post office may lead them to act out, draw, or build a post office with blocks. The teacher makes a label to mark the "Post Office" or "Store"

built by the children. This gives them another contact with written words. The teacher may also read stories about a post office. Or the children may make up their own stories about the post office.

Other group activities teach children to use numbers. These activities include measuring food for pets or preparing simple food for parties at school.

Formal and Informal Activities. Most of the time, kindergarten children are free to choose their activities and their friends. The room will be filled with small groups of three, four, or five youngsters working and playing together. Some 5-year-olds begin to be ready to work with larger groups, and to work in a more organized way. So the kindergarten has some brief periods that are usually planned in advance. Many kindergartens use part of their outdoor time for a simple organized game. Music time is often a period when all the children sing or dance briefly, or listen together.

Some teachers and parents believe there should be more of these formal, organized periods. They regard kindergarten as groundwork for first grade. They believe that a kindergarten should resemble a first grade, and help youngsters become accustomed to less talking and moving about. Other parents and teachers believe that the informal kindergarten is the best way to prepare a child for first grade, because it encourages him to do things that he is best able to do.

Kindergarten children, like those of all ages, differ from each other. A few have great interest in learning how to read, count, or write. Others are not interested in these activities. The best kindergartens provide activities that challenge all the youngsters, regardless of their development, with help from the teacher when they need it.

The Home usually has close ties with the kindergarten. Many kindergartens do not send report cards to

parents. Instead, the teacher visits the home and the parents visit the kindergarten. They talk together about the child's development. Many kindergartens hold frequent group meetings for parents, in spring before school and during the school year. Sometimes parents work in the kindergarten, helping with music, stories, and such activities as trips and parties.

The Room and Equipment

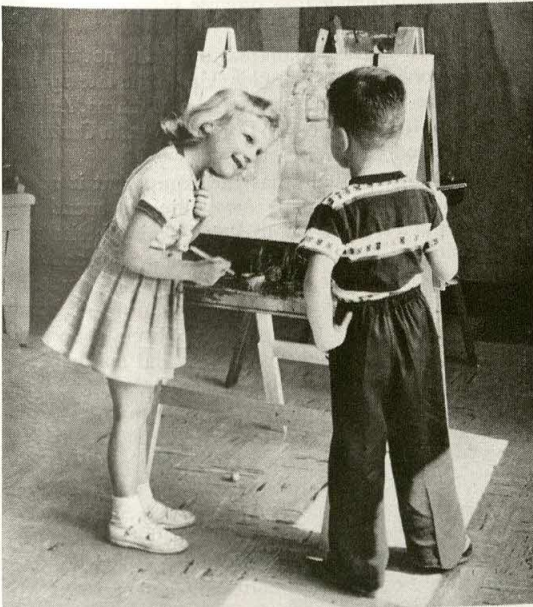
The Kindergarten Room is usually the largest in an elementary school. It is big enough for the children to move about freely and to make large buildings out of blocks. A kindergarten generally has its own outdoor play space. Youngsters develop their physical skills and coordination by climbing, running, and taking part in other active play.

The homelike kindergarten room helps the child adjust to his first step away from home. Some kindergartens have fireplaces. Windows are low and occasionally curtained, with window seats so the children can see outside. Plants and flowers, aquariums, and cages of pets make the room attractive and interesting.

The kindergarten is almost always on the first floor of a school building, near an entrance. This is so the younger children do not have to mix with crowds of older children. They even have their own washbasins and toilets, which are usually next to the playroom.

Equipment in a kindergarten consists largely of play materials that youngsters enjoy. There are blocks of all sizes and shapes. Special large blocks for kindergartens can be put together to make buildings that are large enough for the children to play in.

Popular art materials include paints and brushes, easels, finger paints, crayons and colored pencils, and



Kindergarten Children Learn to Work Together. The young painter, left, is interested in her classmate's opinion of her



Walter Chandoha

work. Two boys, right, discover the importance of cooperation even in their simple task of putting blocks in a toy truck.

KINDERGARTEN

clay. Children with interests in construction enjoy workbenches equipped with small hammers, saws, and other tools they can use.

Almost all children like to play make-believe. For this purpose, a special corner is equipped with furniture, kitchen utensils, and colored materials and costumes. Boys and girls "play house" with toy stoves, refrigerators, and pots and pans. They use ironing boards and washtubs. They have dolls and doll carriages, and dressers. The kindergarten also encourages other kinds of make-believe with its sandbox large enough to hold sand castles, its small cars and trucks, and its blocks and paints.

Music also plays a big part in the kindergarten program. Frequently the room has a piano and a phonograph. The youngsters learn or create songs, and sing them with the teacher. They beat rhythms with drums, cymbals, and triangles.

Most kindergartens have a "library corner" with a variety of interesting and attractive books. The teacher stimulates use of the library corner by reading stories to the children and showing them pictures from the books. She encourages the youngsters to handle and examine the books.

The outdoor playground often has a large climbing apparatus, big packing boxes, and climbing boards to build the children's physical strength and muscular coordination. Kindergarten children usually do not climb for climbing's sake. Their imagination changes boxes and boards into automobiles, airplanes, and ships.

The Kindergarten Teacher

Almost all kindergarten teachers are women. They usually have as thorough training as do teachers in other grades. Sometimes they receive even more specialized training. Many kindergarten teachers are trained to teach the first and second grades, too. More than 30 states issue certificates specifically for either kindergarten teaching, nursery-kindergarten teaching, or a combination of nursery-kindergarten-primary teaching. Kindergarten teachers in public schools earn the same salary as other teachers with the same training and experience.

A good kindergarten teacher enjoys working with young children. She must have patience and the ability to talk with children on their level. The teacher helps boys and girls become more independent. But she must also help the youngsters with their clothing and with the development of good health habits.

History

Early Kindergartens. Friedrich Froebel, the father of the kindergarten movement, started his first kindergarten in Blankenburg, Germany, in 1837. Other educators had established schools for educating young children, but Froebel was the first to name the school a kindergarten. In 1828, Froebel had written: "I shall not call this an infant school, because I do not intend the children to be schooled, but to be allowed under the gentlest treatment to develop freely." Froebel's theory of kindergarten teaching still exists in modern schools.

Before Froebel established his kindergarten, Robert Owen had established infant schools at New Lanark, Scotland, and New Harmony, Ind. Owen's idea was

to take children almost from the cradle and train them in good habits. See OWEN (Robert).

Mrs. Carl Schurz, a pupil of Froebel, established the first kindergarten in the United States in 1855 at Watertown, Wis. It was a German-speaking school for the children of German immigrants (see SCHURZ [family]). Elizabeth P. Peabody, a teacher and author, started a kindergarten in Boston in 1860 for English-speaking children. The first public kindergarten appeared in the St. Louis school system in 1873 (see HARRIS, WILLIAM T.). The first public kindergarten in Canada was established in Ontario in 1855.

The first kindergartens chiefly served children of underprivileged homes. Teaching in kindergartens was regarded as charity work. Even the early public-school kindergartens were privately supported by charities. They aimed at providing good experiences for children often as young as 3. They also tried to improve home conditions. The teacher spent almost half her time helping families in much the same manner as the social worker does today.

The number of kindergartens increased rapidly during the early 1900's. Teacher-training schools gave increased attention to the preparation of kindergarten teachers. Many communities recognized the value of kindergarten training, and provided funds for enriching the teaching program.

Kindergartens Today. In spite of its long history, the kindergarten movement faces serious problems. Large numbers of children do not attend kindergarten because there is none in their communities. Many kindergarten classes include more children than one teacher can adequately supervise. Most public kindergartens operate half-day sessions, with one group of children attending in the morning and another in the afternoon. During the depression years of the 1930's, many kindergartens were abolished to save money for classrooms used by primary-grade children. In the 1950's, some kindergartens were eliminated to provide classrooms for an increased school population.

Poor school districts and rural areas do not usually provide schooling for 5-year-olds. Up to the late 1950's, there were no public kindergartens in Alabama, Arkansas, Idaho, Mississippi, North Carolina, South Carolina, Tennessee, and West Virginia.

A kindergarten usually has the equipment it needs if the community and state are willing to spend the necessary money. Some boards of education hesitate to spend funds for what seems to be mere play activity. Many kindergarten teachers have to make some of their own equipment. Cigar boxes and cheeseboxes make excellent blocks. Orange and apple crates become clothing lockers, chairs, sofas, stoves, and refrigerators. Good climbing apparatus has been made from rope, spare tires, inner tubes, and scrap lumber. Parents who see the need for play materials often help the teacher collect and make equipment.

Only a few states provide funds for aid to kindergartens in the same manner as such funds are provided for other grades. However, many states do provide some form of aid for kindergartens. Nevertheless, kindergartens must be locally supported in most states, either through taxes or parent fees.

JAMES L. HYMES, JR.

See also FROEBEL, FRIEDRICH; KINDERGARTEN ASSOCIATION, NATIONAL; NURSERY SCHOOL.

KINDERGARTEN ASSOCIATION, NATIONAL, is an organization that works to provide kindergartens for all children in the United States. It gives materials and counseling to communities that wish to open kindergartens, preferably in public school systems and under trained kindergarten teachers. It also works for better public understanding of the importance of kindergarten education. The association is a nonprofit agency supported by voluntary contributions. It was founded in 1909 and has headquarters at 8 W. 40th Street, New York 18, N.Y.

HOWARD R. BEST

KINEMATICS, *KIN ee MAT ics*, is the branch of mechanics that deals with pure motion—that is, motion apart from any cause. Kinematics does not study the mass of a moving body or the forces that set it moving and influence its speed. Geometry uses the idea of a point and the movement of that point in space. Kinematics adds the idea of time and of speed. See also **FALLING BODIES**, **LAW OF; MOTION**.

ROBERT F. PATON

KINESCOPE. See **TELEVISION** (How TV Is Received at Home).

KINETIC ENERGY. See **ENERGY** (Potential and Kinetic Energy); **MOMENTUM**.

KINETIC THEORY OF GASES. See **GAS**.

KINETICS. See **STATICS**.

KINETOGRAPH AND KINETOSCOPE. See **MOTION PICTURE** (The First Motion Picture).

KING. For names of kings, see names of individuals. Example, **GEORGE (VI)** of England.

KING is a title denoting sovereignty. In many eastern countries, the king or emperor was once considered to be the representative of a god or a divine family. In Europe, many Teutonic tribes elected a king only in wartimes. He ruled a tribe, not a territory. When the tribes were converted to Christianity, the king's prestige increased. The church crowned him and supported the idea that he was the source of justice in the realm as the vice-regent of God. But the king was not all-powerful. He was bound by the customary law of his people.

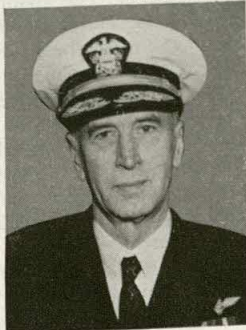
From these roots grew the idea of a responsible monarchy. In Great Britain and other European countries, the monarch possesses little authority. In other kingdoms, the ruler has virtually absolute power. I. J. SANDERS

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Coronation	Primogeniture	Regicide
Crown	Prince Consort	Viceroy

KING, ERNEST JOSEPH (1878-1956), commanded the United States Fleet during World War II. He took this post shortly after the United States entered the war in 1941. As commander in chief, he directed the greatest naval fleet in history. Early in 1942, he also became Chief of Naval Operations. King held both assignments until after the war, and was the first and only officer in American naval history to occupy the two posts. He represented the navy on the Joint Chiefs of Staff and the Combined Chiefs of Staff Committee.

Ernest Joseph King
United Press Int.



KING, THOMAS STARR

He played a major role in planning Allied strategy and naval operations. After the war, King served as an adviser to the Secretary of Defense and Secretary of the Navy. He published his autobiography, *Fleet Admiral King, A Naval Record*, in 1952.

King was born in Lorain, Ohio, and attended public schools there. He was graduated from the United States Naval Academy in 1901, the fourth highest in his class. He started his career as a midshipman in the Spanish-American War. King received his commission in 1903, and served in all branches of the navy. In 1933, he became a rear admiral and was named Chief of the Bureau of Aeronautics.

During his career, King became an expert on surface, submarine, and air warfare. Critics sometimes accused him of being "battleship-minded," but the navy developed its air forces to their greatest extent under his leadership. King learned to fly when he was 49. In 1941, he became an admiral and Commander in Chief of the U.S. Atlantic Fleet. In 1944, he rose to the newly created rank of fleet admiral. He received the Distinguished Service Cross twice, for raising the sunken submarines *S-51* and *S-4*.

DONALD W. MITCHELL

KING, FRANK O. See **COMICS** (Gasoline Alley).

KING, FRANKLIN HIRAM. See **SILCO**.

KING, RUFUS (1755-1827), was an American statesman and diplomat noted for his early opposition to the expansion of slavery into the West. In 1785, as a member of Congress under the Articles of Confederation, he proposed that slavery be prohibited in the Northwest Territory. Two years later, this was done by the famous Northwest Ordinance. In 1819 and 1820, as a United States Senator from New York, King opposed the admission of Missouri as a slave state, but the state was admitted with slavery in accordance with the Missouri Compromise. Afterward, King urged the emancipation of all slaves with payment to their owners.

King was a delegate to the Constitutional Convention of 1787, and helped get the Constitution ratified. He served as minister to Great Britain from 1796 to 1803 and in 1825 and 1826. In 1804 and 1808, he was the Federalist candidate for Vice-President. He ran against James Monroe for President in 1816. King was born in Scarborough, Me., then a part of Massachusetts.



Brown Bros.

Rufus King

RICHARD N. CURRENT

KING, THOMAS STARR (1824-1864), a Unitarian minister and lecturer, played a great part in rallying San Francisco's support for the Union cause during the Civil War. He was born in New York City. He had to leave school at the age of 15, but educated himself. In 1846, King became pastor of a Universalist church in Charlestown, Mass., and of the Hollis Street Unitarian Church of Boston in 1848. He became popular as a lecturer on current issues. He served as a pastor in San Francisco from 1860 to 1864.

L. J. TRINTERUD

KING, WILLIAM

KING, WILLIAM (1768-1852), led the movement to separate Maine from Massachusetts, and served as the first governor of Maine in 1820 and 1821. He served in the Massachusetts legislature at various times between 1795 and 1819, and in the state militia. He was elected president of the Maine state constitutional convention in 1819. King was born in Scarborough, Me., then part of Massachusetts. He became a wealthy shipowner. He also served as a trustee of both Colby and Bowdoin colleges in Maine.

ARTHUR E. EKIRCH, JR.

KING, WILLIAM LYON MACKENZIE (1874-1950), was Prime Minister of Canada for 21 years, longer than any other Canadian prime minister in history. During his career, Canada attained full status as a nation and improved its relations with the United States.

King was born in Berlin (now Kitchener), Ont. He was educated at Toronto, Chicago, and Harvard universities. Interested in economics and sociology, he was greatly moved by the disgraceful labor conditions in large American cities, and wrote a series of newspaper articles showing the extent to which similar conditions existed in Canada. He prepared a report for the government on the conditions of the uniform-manufacturing industry. This led to adoption of the Fair Wages Resolution by the Federal Parliament.

From 1900 to 1908, King served as Deputy Minister of Labour. In 1909, he became Minister of Labour, and was elected to parliament as a Liberal. He served until 1911. From 1914 to 1917, he was director of industrial research for the Rockefeller Foundation.

King was chosen leader of the Liberal party in 1919 at the age of 45. Two years later, the Liberals won the general election and King became prime minister. He served until 1948 except for a brief period in 1926, and from 1930 to 1935. King represented Canada in 1926 at the Imperial Conference, which made the governor-general the personal representative of the British monarch in Canada.

Defeated in 1930 as a result of the economic depression, King returned to power in 1935. His government carried into effect a system of unemployment insurance, and in 1940, he signed the agreement which established the Permanent Joint Board of Defense with the U.S. During World War II, King's government established a good record for efficiency. It survived the military draft crisis of 1944, and won the election of 1945. Finally, in 1948, King resigned as prime minister and party leader.

During his administration, King played a unique role as a connecting link between Great Britain and the United States. He believed that the British Commonwealth should be part of a larger community including the United States, and so prepared the way for the idea of a North Atlantic union.

G. F. G. STANLEY

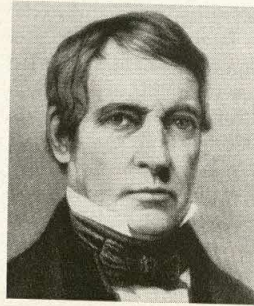
See also CANADA, HISTORY OF (Canada as a Nation).



W. L. Mackenzie King

Brown Bros.

KING, WILLIAM RUFUS DEVANE (1786-1853), was elected Vice-President of the United States to serve under President Franklin Pierce. King was seriously ill at the time, and by special act of Congress he was permitted to take his oath of inauguration before an American consul in Havana, Cuba, where he was convalescing. He died six weeks later, without ever performing the duties of Vice-President.



Brown Bros.

William Rufus King

King served in the United States House of Representatives from 1811 to 1816 as a Democrat from North Carolina, and in the U.S. Senate as a Democrat from

Alabama from 1819 to 1844, and from 1848 to 1852. He also served as minister to France from 1844 to 1846. King was born in Sampson County, North Carolina. He was graduated from the University of North Carolina in 1803, and practiced law.

IRVING G. WILLIAMS

KING ARTHUR. See ARTHUR, KING.

KING BELL. See BELL (picture).

KING COLLEGE is a coeducational private college at Bristol, Tenn. It is affiliated with the Presbyterian church. Courses in the liberal arts lead to bachelor's degrees. The college was founded in 1867 by James King. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KING CRAB is a large sea animal with a shell shaped like a horse's hoof. It is also called the *horseshoe crab* and *horsefoot*. Zoologists class the king crab as an arthropod, but its exact classification is unsettled.

The king crab lives along the Atlantic shores from Maine to the West Indies and Yucatan, and the Pacific shores from Japan down the China coast, through Indonesia. It is not a true crab, but is related to both the scorpions and the extinct trilobites. It is one of the last remaining members of a large group of animals that lived in prehistoric times.

This creature's body has two segments. It has a large hoof-shaped head and thorax, and a smaller abdomen, or hind body. A long sharp spine sticks up from the end of the abdomen. This is a weapon of defense. The body, including the spine, may be nearly 2 feet long. On the upper surface of the head lie a pair of large compound eyes and two small simple eyes. The mouth is on the center of the lower surface. The king crab has six pairs of legs. The legs end in spines, which are used to grasp food and prey. The abdomen bears six pairs of swimming organs. The first pair are the openings of the egg ducts. The others bear numerous flat, leaflike gills, or *gill books*, through which the animal breathes.

The king crab usually stays under 12 to 36 feet of water. It crawls up on the beaches in early summer to lay its eggs where high tide will just wash over them. On the sea bottom, it plows through the mud and sand. It scoops with its legs and pushes with its spike-tail, seeking sea worms and small mollusks. When it finds them, it uses the spines on its legs to tear the food into bits small enough to digest.

In regions where it lives, the king crab is used as food. People regard it as a delicacy equal to lobster. The king



L. W. Brownell; Hugh Spencer

crab also has been much used as garden fertilizer. At times it has become important as an enemy of the oyster.

Scientific Classification. The king crab is the only surviving member of the order *Xiphosura*. All five species belong to the genus *Limulus*. The American king crab is species *polyphemus*.

EDWARD A. CHAPIN

See also ARACHNID.

KING GEORGE VI FALLS, one of the world's highest waterfalls, drops 1,600 feet in the wilderness of western British Guiana near Mount Roraima. The falls, formed by the Utishi River, drop over two huge cliffs. Paul A. Zahl, a scientist, discovered the falls in 1938.

KING GEORGE'S WAR. See FRENCH AND INDIAN WARS.

KING-HORN is the most important character in the first known English romance in verse, also named *King-Horn*. The poem dates from the late 1200's. The poem describes the adventures of King-Horn, a child of the king and queen of the Isle of Man.

KING JAMES VERSION. See BIBLE (The Accepted Protestant Versions in English).

KING LEAR. See SHAKESPEARE, WILLIAM (Synopsis of Plays).

KING MACKEREL. See FISHING (Game-Fishing World Records).

KING MOUNTAIN is one of the 10 highest mountains in North America. It towers 17,170 feet in the St. Elias Mountains of the Yukon Territory in northwestern Canada. Bradford Washburn, an explorer, discovered it in 1935.

KING PHILIP'S WAR. See PHILIP, KING; INDIAN WARS (King Philip's War).

KING RANCH. See TEXAS (Interesting Places to Visit).



King Crab has six pairs of legs, left. Only its shell is visible as the animal scuttles through the sand, above.

KING SNAKE is any one of a group of snakes, all of which prey on other snakes. These reptiles are harmless to man. They are somewhat immune to snake venom, and do not hesitate to attack and eat rattlesnakes. But it is not true that rattlesnakes and other poisonous species are the king snake's natural enemies. King snakes also frequently eat rodents and other small furred animals. They coil around their prey and squeeze it to death. King snakes range in length from 18 inches to 6 feet. They may be marked with black, brown, white, red, and yellow hues. In the eastern United States the common king snake is about 3½ feet long. It is black with narrow yellow bands across its back. See also MILK SNAKE; SNAKE (color picture, Coral King Snake).

Scientific Classification. The king snakes are in the family *Colubridae*. The eastern king snake is genus *Lampropeltis*, species *getulus*.

CLIFFORD H. POPE

KING WHITING. See KINGFISH.

KING WILLIAM'S WAR. See FRENCH AND INDIAN WARS.

KING BIRD, or **BEE MARTIN**. The eastern kingbird is a member of the flycatcher family. It is helpful to farmers because it eats so many insects. It makes its home in all parts of the United States except the Southwest, and also lives in southern Canada. Six other kinds of kingbirds are found in the United States.

The eastern kingbird is drab-colored, with a slate-gray back and white under parts. It has a patch of bright orange-red feathers on top of its black head.

The kingbird gets its name from the way it attacks and rules over other birds, especially crows and hawks. It attacks them furiously in the air and makes them change their course. The kingbird does this only during



Hugo Schroder, NAS

The Kingbird Catches Insects for Food.

the breeding season, to protect its nest, mate, and young. The kingbird feeds on insects. Its other name, *bee martin*, comes from its fondness for bees.

Scientific Classification. Kingbirds belong to the family *Tyrannidae*. The eastern kingbird is genus *Tyrannus*, species *tyrannus*.

ARTHUR A. ALLEN and LEON A. HAUSMAN

See also FLYCATCHER.

KINGDOM. All physical things studied in natural science are divided into three groups, called kingdoms. These are (1) the mineral kingdom (lifeless things), (2) the plant kingdom, and (3) the animal kingdom. Scientists further divide the plant and animal kingdoms into *phyla*. The division between the kingdoms is not always clear. Certain low organisms are on the borderline between plants and animals, while certain nonliving things sometimes act somewhat like living organisms. See also CLASSIFICATION.

WILLIAM C. BEAVER

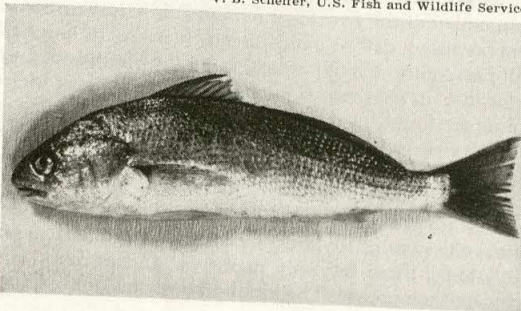
KINGDOM OF THE TWO SICILIES. See SICILIES, KINGDOM OF THE TWO.

KINGFISH, a nickname for Huey Long. See LONG, HUEY PIERCE.

KINGFISH is the name given to several different fishes. These include two important food fishes of the mackerel

The Kingfish of the Croaker Family Eats Small Fish.

V. B. Scheffer, U.S. Fish and Wildlife Service



family and the king whiting, which belongs to the croaker family.

The *pintado*, or *kingfish*, belongs to the same family as the Spanish mackerel. It lives out in the Atlantic Ocean from Brazil to Cape Cod. This fish usually weighs about 5 pounds, but large ones may grow 3 feet long and weigh 50 pounds. Like the Spanish mackerel, it has sharp, V-shaped tail fins, a bluish back, and brown side spots, but it is longer and thinner. A relative without spots, the *cero*, also is called kingfish.

The *king whiting*, or *kingfish*, lives near the Atlantic seashore from Maine to Florida. It is green with darker green stripes on back and sides and usually grows about 12 to 18 inches long. This fish lives on the sea bottom, where it eats small fish, shellfish, and worms. Cold weather drives it out to deeper water, but it comes in when the weather turns warm again. Its eggs float in the sea, and hatch into larvae. The kingfish is a favorite among sportsmen.

The word kingfish is applied to related species from Australia, the East Indies to India, and California.

Scientific Classification. The deep-sea kingfish (*pintado*) belongs to the mackerel family, *Cybiidae*. It is classified as genus *Scomberomorus*, species *regalis*. The king whiting belongs to the croaker family, *Sciaenidae*. It is *Menticirrhus saxatilis*.

LEONARD P. SCHULTZ

See also FISHING (table, Game-Fishing World Records); MACKEREL.

KINGFISHER is any one of a large family of birds that live throughout the world. All members of this family have large heads with crests and long, heavy, pointed bills. These birds have short legs and short stubby tails. The outer and middle toes of kingfishers are partially joined together by membranes.

The kingfisher family is made up of both woodland and water birds. The *kookaburra*, commonly found in Australia, is an example of a woodland kingfisher (see KOOKABURRA). The *belted kingfisher*, a water bird, is the only species commonly found in the United States. Its upper parts are colored deep blue, or bluish gray with white markings. The under parts are white, and there is a broad white ring around the neck. There is also a broad collar of blue across the breast.

Belted kingfishers spend long hours sitting on branches over a stream watching until a small fish swims past. Then they dive into the water after it. Kingfishers may spear the fish with their long bills, but usually they seize it. They kill the fish by beating it against a branch. Then the birds toss the fish into the air, catching it headfirst as it falls. In addition to fishes, kingfishers sometimes eat crawfishes, frogs, tadpoles, salamanders, and insects.

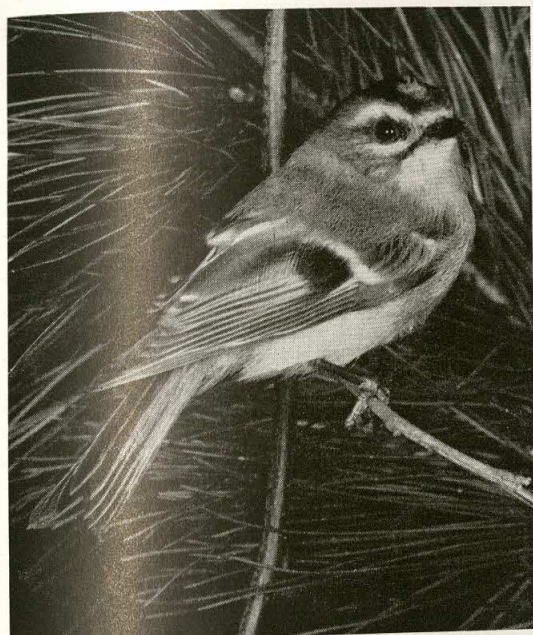
Belted kingfishers dig their nests in the steep walls of claybanks or sandbanks. A tunnel from 4 to 15 feet long leads to a larger hollow. Here the kingfisher builds its nest, usually of fish bones and scales, and lays five to eight glossy white eggs. The male and female work in shifts to dig their tunnel. They also take turns sitting on the eggs.

Scientific Classification. Kingfishers make up the family *Alcedinidae*. The belted kingfisher is genus *Megasceryle*, species *alcyon*.

GEORGE J. WALLACE

See also BIRD (Territories of Birds; color picture, Other Bird Favorites).

KINGHEAD. See RAGWEED.



G. Ronald Austing, NAS

Tiny Kinglets Feed on Insects in Evergreen Trees.

KINGLET is a dainty little olive-green bird with a bright crest on its head. Two kinds of kinglets, the *ruby-crowned* and the *golden-crowned*, live in North America. Their names tell the color of their crest. Both birds have gray breasts and short, dusky tails edged in olive-green like their backs.

Many of the golden-crowned kinglets are so rugged that they never fly south during the winter. But ruby-crowned kinglets fly to the southern United States, Central America, and Mexico.

Both kinds of kinglets live in pines and other evergreens, and build cup-shaped nests of moss, grass, and feathers that hang near the tips of branches.

Scientific Classification. The kinglets belong to the family *Sylviidae*. The golden-crowned kinglet is genus *Regulus*, species *satrapa*. The ruby-crowned kinglet is *Regulus calendula*.

ARTHUR A. ALLEN and LEON A. HAUSMAN

See also **BIRD** (color pictures, Birds' Eggs; Favorite Songbirds).

KINGMAKER. See **WARWICK, EARL OF**.

KINGS, BOOKS OF, are two books in the Old Testament, or Hebrew Bible. They tell the story of the Hebrews from the death of King David, about 960 B.C., until the Babylonians destroyed the Kingdom of Judah in 586 B.C. The books describe King Solomon's reign and the division of the nation into two kingdoms after his death (see **Jews** [Israel and Judah]). They give an account of the lives of the rulers of both kingdoms and the main events of their reigns. They also contain traditional stories about the great prophet Elijah and his successor Elisha (see **ELIJAH**; **ELISHA**).

The Books of Kings are similar to the other historical books of the Old Testament. They interpret the history of the Hebrew nation from the point of view of the prophets, who emphasized obedience to God. Many scholars believe that the books were compiled during the Babylonian Exile to help the people preserve the memory of their national history.

ROBERT GORDIS

KINGS CANYON NATIONAL PARK

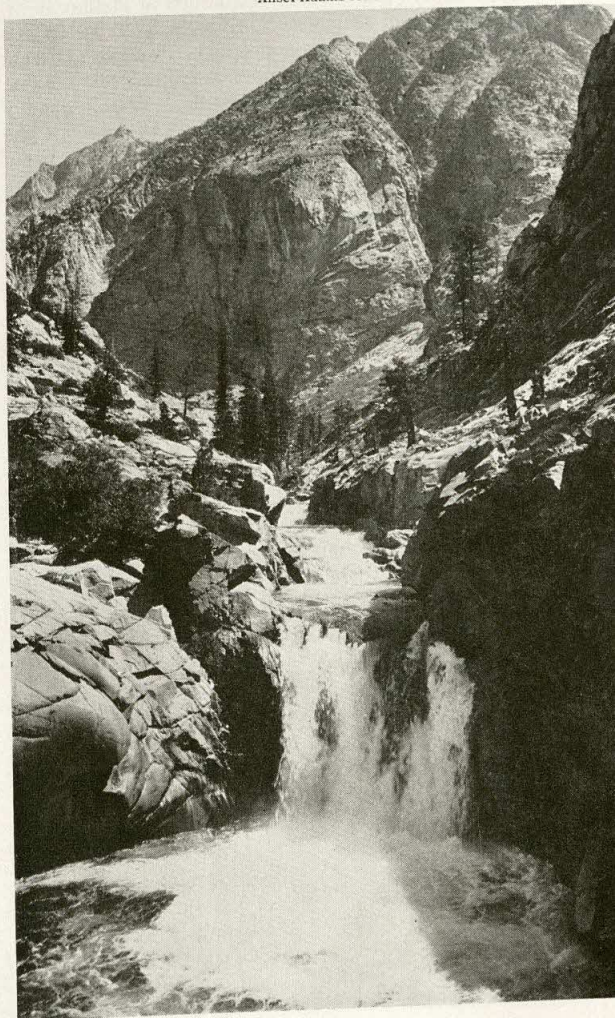
KINGS CANYON NATIONAL PARK is a 454,650-acre scenic wilderness in east-central California. It has some of the highest peaks of the Sierra Nevada mountains, and some of the oldest and largest giant sequoia trees in the United States.

The Grant Grove section of the park has trees that are 2,000 to 3,000 years old. The largest and most famous of these trees is the General Grant. It rises 267 feet, and has a base circumference of 107.6 feet. This tree has been designated "The Nation's Christmas Tree." Another giant is the General Lee Tree, second largest in the Grant Grove. The Hart Tree, the fourth largest known sequoia, is in the park's Redwood Mountain Grove. In addition to the sequoias, Kings Canyon National Park has many huge pine trees.

The Kings River portion of the park lies northeast of Grant Grove. Here the winding Kings River carves out Tehipite Valley Canyon and Kings Canyon. Kings

Kings Canyon National Park in California is a scenic wonderland of snow-capped mountain peaks and deep, rocky gorges through which the swift, winding Kings River flows.

Ansel Adams for National Park Service



KING'S COLLEGE

Canyon is about 10 miles long and a half mile wide. Its walls are 2,500 to 5,000 feet high. Snow-capped mountains tower above the canyons. Much of the park can be reached only by trail. Sequoia National Park lies next to Kings Canyon National Park on the south. The two were established separately, but are virtually a single park. They are administered as one park by the National Park Service.

JAMES J. CULLINANE

KING'S COLLEGE. See COLUMBIA UNIVERSITY.

KING'S COLLEGE is a liberal arts school for men in Wilkes-Barre, Pa. The Roman Catholic Holy Cross Fathers conduct the college. The tallest statue of Christ in North America is Christ the King, a 24-foot aluminum structure atop the main campus building. King's College was founded in 1946 and grants B.A. and B.S. degrees. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KING'S COLLEGE, UNIVERSITY OF, was founded at Windsor, Nova Scotia, in 1789. It is recognized as the oldest English speaking university in the British overseas commonwealth. The college was destroyed by fire in 1920.

In 1923, King's was re-established at Halifax in association with Dalhousie University as far as its arts and sciences faculty is concerned. All degrees, except those in divinity, are granted through Dalhousie (see DALHOUSIE UNIVERSITY). It also has a divinity faculty which is the recognized School of Divinity for the Anglican Dioceses of Nova Scotia and Fredericton. King's College is a residential school founded on the pattern of an Oxford college.

H. L. PUXLEY

KING'S COUNSEL. See LAWYER.

KING'S EVIL. See SCROFULA.

KING'S HIGHWAY. See PENNSYLVANIA (Transportation).

KING'S MOUNTAIN, BATTLE OF. See REVOLUTIONARY WAR IN AMERICA (The War in the South; table, Major Battles).

KING'S MOUNTAIN NATIONAL MILITARY PARK. See NATIONAL PARK (National Military Parks).

KINGS PEAK. See UTAH (Land Regions).

KINGS POINT. See UNITED STATES MERCHANT MARINE ACADEMY.

KINGSLEY, CHARLES (1819-1875), was a British novelist and clergyman. He spent much of his life working to improve the conditions of laboring people. He wrote poems and novels, as well as a charming and

humorous fairy tale, *The Water Babies* (1863). *Westward Ho!* (1855), his most successful novel, is a vivid tale of adventure set in the time of Queen Elizabeth I.

Kingsley was born in Devonshire. He studied at King's College, London, and at Cambridge. For many years he was rector of Eversley in Hampshire. In 1859, he was appointed chaplain to Queen Victoria, and from 1860 to 1869 he was professor of modern

history at Cambridge. He later served as canon at Chester and Westminster.

His first novel, *Yeast*, was published in 1848. It was not very well written, but it showed the author's sympathy for the social and religious problems of the laborer. He also wrote the novels *Alton Locke* (1850), *Hypatia* (1853), *Two Years Ago* (1857), and *Hereward the Wake* (1866).

LIONEL STEVENSON

KINGSLEY, SIDNEY (1906-), an American dramatist, wrote realistic plays with settings based on actual fact. He won a Pulitzer prize in 1934 for the first of his plays to be produced, *Men in White* (1933). The action of the play takes place in a hospital. Kingsley spent many weeks studying hospital life before he wrote the play.

He investigated conditions in slum areas to write *Dead End* (1936). He wrote *Detective Story* in 1949 after observing life in detective squad rooms. All three plays later became successful motion pictures. He wrote *The Patriots* (1945) and the stage version of Arthur Koestler's *Darkness at Noon* (1951), both of which won the New York Drama Critics' Circle award. Kingsley was born Sidney Kieschner in New York City, and was graduated from Cornell University.

GEORGE FREEDLEY

KINGSLEY DAM is part of the Central Nebraska Power and Irrigation District on the North Platte River 10 miles north of Ogallala. The earth-fill dam is 170 feet high and 17,840 feet long. The dam stores water for irrigation and electric energy, and also controls flood waters of the North Platte. The Kingsley Reservoir, called McConaughy Lake, can hold about 2,000,000 acre-feet of water, enough to irrigate 500,000 acres of land in central Nebraska.

T. W. MERMEL

See also DAM.

KINGSTON (pop. 109,056; alt. 25 ft.) is the capital city and chief port of Jamaica, an island in the West Indies Federation. It lies on the southeast coast of Jamaica, at the northern end of an excellent landlocked harbor (see WEST INDIES FEDERATION [map]).

Kingston is in the heart of a rich agricultural region. Industries include food processing, tanning, and wood-working. The city is clean and modern, with handsome government buildings and homes.

Kingston grew rapidly after 1692, when an earthquake destroyed the nearby city of Port Royal. Kingston soon replaced Port Royal as a commercial center. It became the capital of Jamaica in 1872. Successive disasters, including a hurricane in 1880, fire in 1882, and a destructive earthquake in 1907, have destroyed many historic buildings and led to extensive rebuilding in the city.

W. L. BURN

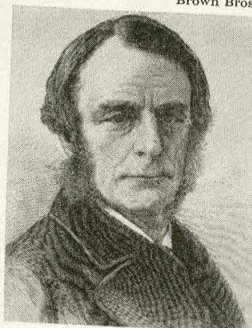
KINGSTON, N.Y. (pop. 29,260; alt. 225 ft.), was the first capital of New York. It is a manufacturing center for clothing, and airplane, marine, and engineering equipment. Kingston is about 90 miles north of New York City, on the west bank of the Hudson River.

The Dutch settled on the site of Kingston in 1615, but not permanently until 1652. It was chartered as a village in 1658 under the name *Wiltwyck*, which is Dutch for *wild retreat*. The English took over the city in 1664 and renamed it Kingston. It was the capital of New York for several months in 1777. British forces captured and burned Kingston in October, 1777. It was rebuilt. Kingston was chartered as a city in 1872. It has a mayor-council government.

WILLIAM E. YOUNG

Charles Kingsley

Brown Bros.



KINGSTON, Ont. (pop. 48,618; met. area, 58,200), is an industrial center and the most eastern port on the Great Lakes. It lies on the northern shore of Lake Ontario, at the point where the lake empties into the St. Lawrence River. It is also at the mouth of the Cataraqui River. For location, see **ONTARIO** (color map). Kingston factories make diesel locomotives, heavy mining equipment, storage batteries, aluminum products, ceramics, and textiles.

The French built Fort Frontenac on the site of Kingston in 1673. The British burned this defense post in 1758. They rebuilt it in 1783, and renamed it Kingston in honor of King George III of England. Kingston was incorporated in 1838. From 1841 to 1844, the city served as the capital of the combined provinces of Ontario and Quebec. It has one of Canada's most advanced penal institutions. Kingston is the home of Queen's University and the Royal Military College. The city has a mayor-council government. D. M. L. FARR

KINGSTON-UPON-HULL. See **HULL**.

KINKAID, THOMAS CASSIN (1888-), an American naval officer, won fame for his service in the Pacific during World War II. As commander of a carrier task group early in 1942, Admiral Kinkaid took part in the battle of the Coral Sea. Later, on his famous flagship, the aircraft carrier *Enterprise*, he commanded task forces in a series of battles in the Solomon Islands. He commanded U.S. forces in the North Pacific during the 1943 build-up of bases that led to victories at Attu and Kiska.



Brown Bros.

Thomas C. Kinkaid

Kinkaid took command of the Seventh Fleet and Allied naval forces in the southwest Pacific on Nov. 26, 1943. He directed the naval phases of operations that cleared the Japanese from the northern coast of New Guinea. His forces annihilated the Japanese Southern Force in the battle of Surigao Straits, part of the battle for Leyte Gulf. Later, his fleet repulsed the Japanese Central Force.

Kinkaid was born in Hanover, N.H. and he was graduated from the United States Naval Academy. During World War I, Kinkaid served on a diplomatic assignment with the British Admiralty. He became a permanent rear admiral in 1942, an admiral in 1945, and retired from the navy in 1950. DONALD W. MITCHELL

See also **WORLD WAR II** (The War in Asia and the Pacific).

KINKAJOU, *KING kuh joo*, is an animal that looks like a long-tailed cat. It is related to the raccoon and the coati. The kinkajou has a slim body, about 3 feet long from the nose to the tip of its grasping tail, from which it hangs head-downward. Its yellow-brown fur is dense and woolly. Kinkajous live in tropical forests from Mexico to Brazil. They hide in tree holes during the day and feed at night on fruit, insects, birds, and eggs. See also **COATI**; **RACCOON**.

Scientific Classification. The kinkajou belongs to the family *Procyonidae*. It is classified as genus *Potos*, species *flavus*.

VICTOR H. CAHALANE

KIPHUTH, ROBERT J. H.

KINO. See **EUCALYPTUS**.

KINO, EUSEBIO. See **ARIZONA** (Exploration).

KINZIE, JOHN. See **CHICAGO** (Dearborn Massacre).

KIOTO, or **KYOTO**. See **KYOTO**.

KIOWA, *KI oh way*, **INDIANS** hunted buffalo on the southwestern plains of the United States. The Kiowa and their allies, the Comanche, raided many Texas ranches. They probably killed more whites than any other Indian tribe.

For about 60 years, from 1832 to 1892, the Kiowa kept a record of their daring deeds on painted buffalo skins. The bright-colored pictures of horses and teepees showed their fights with the Cheyenne and Osage, and with United States troops. The paintings also showed the yearly celebration of the great sun dance; the coming of the deadly smallpox, cholera, and measles; and the making of a treaty with the whites. Their oldest tradition placed them in the area of the present Virginia City, Mont.

Spanish records mention the Kiowa as early as 1732. In 1805 Lewis and Clark reported them as living on the North Platte River.

By this treaty, signed in 1868, the Kiowa agreed to go with the Comanche to a reservation in Indian Territory (now Oklahoma). But only the Kiowa chiefs had signed the treaty, and no chiefs could force their young men to make such a sacrifice. Many struggles and arrests occurred before the Kiowa finally went to live on the reservation. When trouble broke out in 1874, Satanta, one of the most daring Kiowa leaders, was arrested and sentenced to prison. There he committed suicide. The Kiowa then "put their hands to the plow." They now live peacefully as farmers. Several Kiowa have become well-known artists.

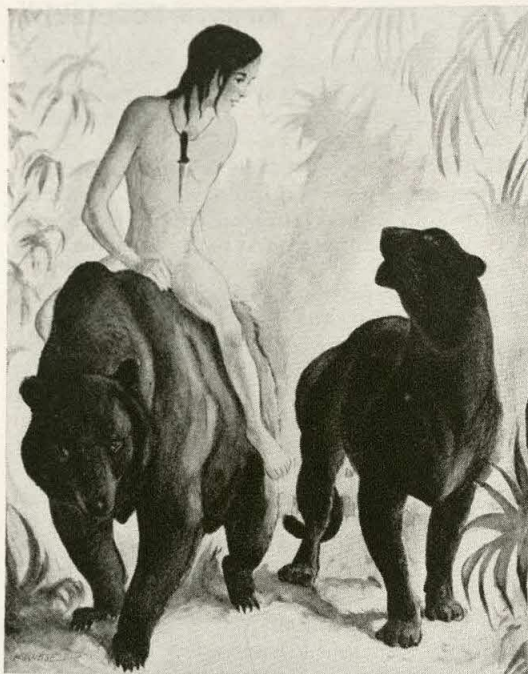
JOHN C. EWERS

KIPHUTH, ROBERT J. H. See **SWIMMING** (Famous Swimmers).

The Kinkajou holds on to tree branches with its long flexible tail. It can hang head-downward, with its tail grasping a limb.

N.Y. Zoological Society





Doubleday, Doran & Co.

KIPLING, RUDYARD (1865-1936), gained renown throughout the world as a poet and storyteller. He was also known as a leading supporter of the British Empire. He received the 1907 Nobel prize for literature.

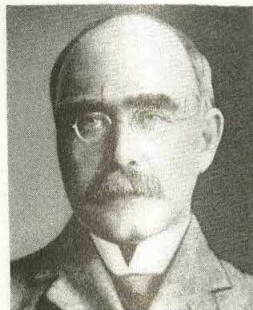
In many of his works, Kipling implied that it was the duty of Great Britain to carry "the white man's burden" by civilizing backward races. But he was not just the shallow imperialist that his critics tried to make him appear. His famous poem, "Recessional," written in 1897 in honor of Queen Victoria's Diamond Jubilee, contains a strong warning to the British not to exploit other races. Many of his poems and short stories praise the people of the colonies. One of the best examples is the poem "Fuzzy-Wuzzy," which praises the courage of the fuzzy-haired warriors who could sometimes defeat the British soldiers.

Tale-Teller and Poet. Kipling interested himself in the romance and adventure which he found in Great Britain's colonial expansion. Examples of the courage and skill of soldiers often appear in his stories. He wrote, too, of folk legends, and he created animal myths. *The Jungle Book* (1894) and *Just So Stories* (1902) give the wit and wisdom of animals who can talk.

Many of the stories in *Soldiers Three* (1888) are full of humor, but others, such as "The Mark of the Beast," are horror tales. Some, like "The Phantom Rickshaw," concern supernatural incidents. Kipling also wrote thoughtful stories about the relations of the British with the people of the colonies. "Without Benefit of Clergy" is a love story on this theme.

Kipling's poems usually have a lively, swinging rhythm. Typical are "Gunga Din" and "Mandalay." The first tells of the courage of an Indian boy who is shot while carrying water to British soldiers in the thick of battle. "Mandalay" tries to capture the strange atmosphere of the East. It has appealed to thousands.

Rudyard Kipling, right, wrote prose and poetry about the British Empire. An illustration, left, by Kurt Wiese in Kipling's *All the Mowgli Stories* shows Mowgli with Baloo, a bear, and Bagheera, a panther.



Brown Bros.

Kipling gave us a wide variety of characters. In *Soldiers Three* and *Plain Tales from the Hills* (1888), there are the three droll soldiers. There is Gunga Din, and most of all, Mowgli, the "man-cub," who appears in the *Jungle Books*. *Barrack-Room Ballads* (1891), written in the language of a soldier, established a picture of a British soldier's life for many readers.

Kipling's first successful novel was *Kim* (1905). In it he gives a colorful and dramatic picture of the complicated life of the Indian people, as seen through the eyes of the poor orphan boy, Kim. *Captains Courageous* (1897), a story of deep-sea fishermen, is one of Kipling's most dramatic stories of the sea.

Child of India. Kipling was born on Dec. 30, 1865, in Bombay, where his father directed an art school. He learned the Hindustani language from his nurse, and he also learned stories of the jungle animals. At six he was sent to school in England, but until he was 12, poor health kept him from attending. At college, he edited the school newspaper. He wrote of his school-day adventures in *Stalky & Co.* (1899).

At 17, Kipling returned to India and soon became a journalist. He wrote sketches and verses which at first were used as "fillers" for unused editorial space. Many were later published in *Departmental Ditties* (1886). At this time he created his "soldiers three," an Irishman, a Cockney, and a Yorkshireman.

Return to England. In 1889, Kipling returned to England. He described the journey in *From Sea to Sea* (1899). In 1890, he published *The Light That Failed*, a frank picture of human suffering and misery. For four years he lived at Brattleboro, Vt., where his wife owned property, and there he wrote about Mowgli. Kipling was so popular in America that several towns were named for him. He returned to England in 1896. By then, he was a controversial figure because of his attitude toward empire, which many misunderstood. It was only after his death that a fair estimate could be made of his views on the subject.

Later Career. In 1900, Kipling went to South Africa to report the Boer War for an English newspaper. He wrote the popular *Puck of Pook's Hill* (1906) for children. Before World War I, he became active in politics. He favored the draft, but not woman suffrage. During the war, he lectured and wrote for the British cause. His only son was killed in World War I.

Kipling's other books include *Rewards and Fairies* (1909), a volume of short stories. His poetry collections include *The Seven Seas* (1896), *Songs from Books* (1912), and *Songs for Youth* (1925).

WALTER WRIGHT

KIPNIS, ALEXANDER (1891-), is a Russian-American operatic and concert bass singer. Recordings of his deep, rich voice in opera and German songs are well known. Born in the Ukraine, he was educated at the Warsaw Conservatory of Music as a bandmaster. After studying voice in Berlin, he made his debut in 1915 in Hamburg. Later, he sang in the leading opera houses of Europe and America.

DANIEL A. HARRIS

KIRBY, WILLIAM. See CANADIAN LITERATURE (After Confederation).

KIRBY-SMITH, EDMUND (1824-1893), was a Confederate general in the Civil War. He commanded troops at the first battle of Bull Run (Manassas) and in the Kentucky campaign in 1862. The next year, he became commander of the Confederate Trans-Mississippi Department. He was promoted to general in 1864.

Kirby-Smith was born at St. Augustine, Fla. He was graduated from the United States Military Academy, and fought in the Mexican War. After the Civil War, he served as president of the Atlantic and Pacific Telegraph Company, and then became chancellor of the University of Nashville. In 1875, he became a professor at the University of the South.

FRANK E. VANDIVER

KIRCHHOFF, GUSTAV was a German physicist. See BUNSEN, ROBERT WILHELM.

KIRGHIZIA, *kīrh GEEZ ee uh*, is an area in the eastern part of Russian Central Asia, western Sinkiang province in China, and the Wakhan Valley of Afghanistan. It is named for the Kirghiz, a group of over 2,063,000 nomadic tribesmen who occupy the area. Two of every three live in the Kirghiz Soviet Socialist Republic.

The Kirghiz are basically Mongoloid. They are short, and have yellowish complexions and black hair. But some of them are light-skinned blonds. The Kirghiz speak a Turkic language. Their way of life resembles that of the Kazakhs and western Mongols. They live in felt tents, and keep cattle, horses, and sheep. They raise wheat, barley, and millet, and are known for their metalwork. Under Russian rule, the Kirghiz acquired their first written language. At first they used Roman letters, and later the Cyrillic alphabet. Many of the Russian Kirghiz have settled down. But some who live in the Wakhan Valley still follow the living pattern of nomadic life.

H. F. SCHURMANN

KIRKWALL. See ORKNEY ISLANDS.

KIRKWOOD, SAMUEL JORDAN (1813-1894), was an American statesman. He became governor of Iowa in 1860. When the Civil War started, he pledged his personal fortune and borrowed from friends to equip volunteers for the Union Army. He served as a Republican United States Senator in 1866 and 1867. He was governor and then became a Senator again in 1877. He joined President James Garfield's Cabinet as Secretary of the Interior in 1881. Kirkwood was born in Hartford County, Maryland.

ARTHUR A. EKIRCH, JR.

KIRTLAND AIR FORCE BASE, N.Mex., houses the U.S. Air Force Special Weapons Center. It covers 2,852 acres. Albuquerque bounds the base to the north and west. Since 1946, the base has done pioneering work in developing and testing atomic weapons. It trained the B-29 bomber crews that dropped the first atomic bombs in combat in World War II. The base was established in 1939, and later named for Col. Roy S. Kirtland, a pilot in the U.S. Army Air Corps.

JOHN H. THOMPSON

KITASATO, SHIBASABURO

KISH was an ancient city in Babylonia. In 1920, scientists uncovered evidence which indicated that Kish was twice destroyed by floods. Some scholars believe that the second flood, about 3400 B.C., was the one described in the story of Noah and the Ark.

KISHI, *kee shee*, **NOBUSUKE** (1896-), served as premier of Japan from 1957 to 1960. He was foreign minister in 1956. His government kept Japan on the side of the Western powers. Kishi engaged in a program of travel and diplomacy to reduce wartime suspicions and increase trade with other Asian countries. He was held as a war-criminal suspect after Japan's surrender in 1945, but was never tried. Kishi was born in Yamaguchi. A government servant before World War II, he re-entered politics in 1952.

MARIUS B. JANSEN

KISS is an expression of respect, friendliness, or love. The peoples of the Western World use this form of expression, but the Japanese and Chinese seldom do. Polynesians express affection by rubbing noses, and Samoans sniff. Some peoples pay homage to their rulers by kissing the ground on which they walk.

The custom of kissing the foot or the hand of a political or religious ruler dates from ancient times. The early Christians took the custom of kissing from the Romans and made it a part of the ceremony of their religion. The "kiss of peace" is given at mass in the Roman Catholic and Eastern Orthodox churches. Roman Catholics kiss the pope's ring to show reverence.

The kiss as an expression of affection probably did not become widespread until the A.D. 500's. The custom spread rapidly in Europe and became a form of greeting between friends and relatives.

JOHN F. CUBER

KISSIMMEE, *kīh SIH mee*, Fla. (pop. 6,845; alt. 70 ft.), is the center of Florida's \$200,000,000 cattle industry. *Cow Town* is its popular name. Kissimmee lies at the head of Lake Tohopekaliga, about 15 miles southwest of Orlando. Prior to 1881, it was a trading post for settlers farther south. During the Civil War, the Kissimmee area supplied cattle for the Confederate armies. The town's growth began when the railroad came in 1881. It now has firms engaged in citrus-fruit packing, sawmilling, and box manufacturing. For location, see FLORIDA (map).

KATHRYN ABBEY HANNA

KIT CARSON. See CARSON, "KIT," CHRISTOPHER.

KIT-CAT CLUB was a London political and literary club in the early 1700's. The club was named for Christopher Cat, in whose tavern in Shire Lane the club met for a time. Cat was known for his mutton pies, which were called *kit-cats*. Many of the leading figures of the early 1700's belonged to the club, among them such literary men as Steele, Addison, and Congreve. Each member donated his own portrait, which was less than full-length because the ceiling of the dining room in which the club met was so low. Such shortened portraits are still called *kit-cats*.

KITASATO, *kee tah sah toh*, **SHIBASABURO**, *she bah sah boo roh* (1852-1931) was a Japanese bacteriologist famous for his experiments with diphtheria and tetanus antitoxins. In 1889, he produced the first pure culture of the tetanus germ, which is used to make tetanus vaccine. One of the discoverers of the bubonic plague germ, he developed a serum that helped prevent epidemics. He was born in Kumamoto, Japan.



United Air Lines Photo, Courtesy Institutions Magazine

A Gleaming Kitchen with modern, stainless steel equipment makes it easy for airline employees to prepare ahead of time the complete meals which will later be served to passengers in flight.

KITCHEN is the room in which food is prepared for eating. Often it is also the room in which family or friends gather for a "snack." It may be almost as important a living center as the living room.

The kitchen was once a luxury that only the rich could afford. In the Middle Ages, poor families cooked in the living room over a fire which also served to heat the home. Those who could afford it cooked over a metal pot, called a *brazier*, which held burning coals. Only the great castles had kitchens. The kitchen was a separate building, just as it was on some of the old plantations in the southern United States.

Kitchens of the Middle Ages did not have light aluminum or stainless steel pots and pans as we have today. Most of their utensils were made of heavy iron. A few might be made of silver. They had to be of thick metal to keep foods warm as they were carried to the main house. The kitchen was not clean and bright as it is today. The floor was usually hard dirt. There was not even a chimney. Smoke from the open fire escaped through holes cut in the roof. Many servants were needed to carry in firewood and water, to keep pots clean, and to do the work of preparing food, such as plucking chickens or scaling fish. These lowly tasks were done either outdoors or in a room called the *scullery*, which was set aside for this purpose.

Even these kitchens of the wealthy did not have stoves. Pastries were baked in heavy ovens of brick or stone. Some of the other food was cooked over braziers. Meat was roasted over an open fire. The roast was slipped onto a long metal stick, called a *spit*, which had a crook at one end. The spit was supported by hooks from above. As the roast cooked, the spit was turned by a servant. In this way, the meat was cooked through and evenly browned on all sides. Gravies were collected in a dripping pan.

Even after better cooking facilities were invented, the kitchen was not what it is today. It was a large and

clumsy room. The cook had to walk many steps between table and stove and sink and storage places.

The Modern Kitchen aims at saving steps. It has several work centers. In the first, which includes the refrigerator, food is prepared. In the second center, food is cooked and served. Instead of the conventional stove, or range, there may be an oven built in the wall, and a worktable conveniently equipped with burners. Electrical cooking utensils, such as frying pans, pressure cookers, and broilers, also are used. In a third center, dishes are washed and put away. A fourth center may have a desk and a chair, a telephone extension, and shelves for cookbooks and recipe files. Here meals can be planned, grocery lists made out, and orders telephoned. Many large kitchens have a dining center, separated from the other part of the kitchen by a counter from which food may be served.

In older homes, dishes, foods, and cooking utensils were stored in closets called *pantries*. Even medieval castles had a pantry, called a *buttery* or *butlery*, where the finer eating utensils were kept. This was the ancestor of the *butler's pantry*, still found in many homes. Today dishes are all stored in kitchen or dining room cabinets with doors. Cabinets line the walls above the work centers and fill the space beneath worktables and sinks. Storage cabinets above the food preparation center are filled with staple foods. Those near the dishwashing center are used for storing china and glassware.

The modern kitchen usually has two or more windows, to provide cross-ventilation. It may have an electric ventilator built into the wall or ceiling to draw off cooking odors and send them outdoors. With clean, light walls and furnishings, plenty of windows, bright curtains, and attractive utensils, the modern kitchen is a cheerful place in which to work. HELEN MARLEY CALAWAY

See also **APPLIANCES**; **COLONIAL LIFE IN AMERICA** (picture, *The Colonial Home*); **HOMEMAKING** (pictures); **PIONEER LIFE** (picture, *Home Life of the Pioneers*).

KITCHEN CABINET was a nickname the enemies of President Andrew Jackson gave to a group of his political advisers. These advisers were not members of the President's official Cabinet, but critics said that they had more influence on the policies of Jackson's administration than the real Cabinet had. Leading members of this group included Major William B. Lewis, second auditor of the United States Treasury; Isaac Hill, United States Senator and former editor of the *New Hampshire Patriot*; Amos Kendall, fourth auditor of the Treasury; Duff Green, editor of the *United States Telegraph*, a Washington newspaper; and Francis P. Blair, Sr., editor of the *Washington Globe*. See also **BLAIR** (Francis, Sr.); **JACKSON, ANDREW**.

JOHN D. HICKS

KITCHEN MIDDEN is a mound of rubbish left behind by early inhabitants of an archaeological site. Such mounds were the refuse piles of camps and villages where people lived long ago. Some of them date back thousands of years. Kitchen middens contain tools made of bones and stone, shells of the shellfish used for food, bits of pottery, and bones of animals and sometimes of humans. Archaeologists who study kitchen middens can reconstruct the daily life and changing customs of people who lived before history was written.

Scientists first studied this kind of mound in Denmark. The term *kitchen midden* comes from Danish words which mean *kitchen leavings*.

People have also studied mounds in other parts of Scandinavia and in northern Spain. Indians left many kitchen middens along the Atlantic and Pacific coasts of North America.

CARLETON S. COON

KITCHEN POLICE. See **ARMY, UNITED STATES** (A Typical Day).

KITCHENER (pop. 59,562), a city in Ontario, Canada, is the center of a prosperous farming and manufacturing district. It produces beverages, leather, furniture, tires, textiles, clothing, radios, and electrical equipment. It also has a meat-packing plant. The city was founded in 1806 as Sand Hills, and later was called Ebytown and Mount Pleasant. Its name was changed to Berlin in 1830, when settlers from Germany arrived, and, in 1916, it became Kitchener. For location, see **ONTARIO** (color map).

D. M. L. FARR

KITCHENER, HORATIO HERBERT (1850-1916), **EARL KITCHENER OF KHARTOUM AND OF BROOME**, was a distinguished British soldier. Early in his career, he served in Palestine, Cyprus, and Egypt. As governor-general of the Sudan and then commander of the Egyptian Army, he put new spirit into the army, broke the power of the dervishes, a fanatic religious group, and, in 1898, reoccupied Khartoum for the British (see **SUDAN**).

Kitchener went to South Africa in 1899 as second in command to General Frederick Sleigh Roberts in the Boer War. When Roberts returned to England, Kitchener became commander of the South African army. After difficult guerrilla warfare, he ended the war successfully (see **BOER WAR**).



Lord Kitchener

Brown Bros.

Then he served as commander in chief of the army in India and later advised the Australian and New Zealand governments on army reforms.

Kitchener's wide experience and great reputation led to his appointment in 1914, at the beginning of World War I, as Secretary of State for War. He foresaw a long war and raised a large British army, an important factor in the eventual success of the Allies. He was drowned in 1916 when a ship bound for Russia on which he and his staff were passengers hit a mine. The son of an army officer, Kitchener was born in County Kerry, Ireland. He was educated at the Royal Military Academy at Woolwich.

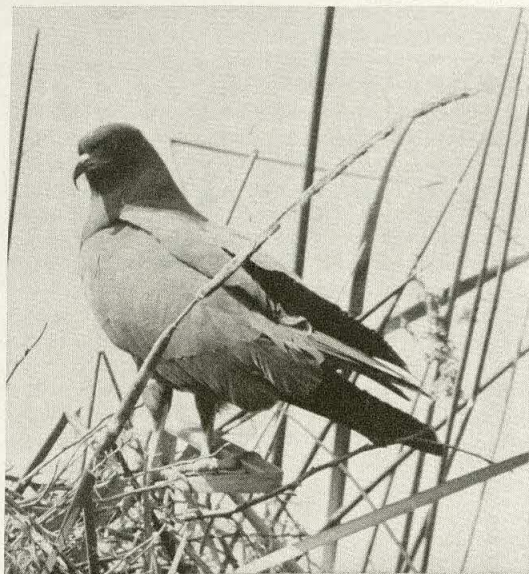
JAMES L. GODFREY

KITE is a bird of prey that belongs to the hawk family. There are many different kinds of kites. They live on all the continents of the world and on the large islands in the southwestern Pacific. They have long, narrow wings, and are graceful gliders. There are four kinds of kites in the United States. They live in the South and Southeast, especially in Florida.

The *swallow-tailed kite* has a long, deeply forked tail. It has some white feathers, but the back, wings, and tail are black with a purple sheen. These kites are 19 to 25 inches long. The *white-tailed* and *Mississippi kites* are

The Everglade Kite builds its nest among the tall reeds in marshes along the shores of Lake Okeechobee in southern Florida.

Allan D. Cruickshank, NAS



shaped somewhat like falcons, with gray-black and white feathers on their wings and bodies. The *Everglade kite* has broad wings and a hooked bill. The male has bluish-black plumage with white and orange markings. The female is brownish colored with white and orange below.

Scientific Classification. Kites are in the family *Accipitridae*. The swallow-tailed is genus *Elanoides*, species *forficatus*, subspecies *forficatus*. The white-tailed is *Elanus leucurus*. The Mississippi is *Ictinia mississippiensis*. The Everglade is *Rostrhamus sociabilis*.

OLIN SEWALL PETTINGILL, JR.

See also **HAWK**.



The Simple Two-Stick Kite Flies Easily in a Light Breeze, Giving Many Hours of Pleasure to Happy Youngsters.

KITE is a device made to be flown in the air at the end of a line. It usually has a light wood framework over which paper or cloth is stretched. Historians think the kite was invented between 400 and 300 B.C. by Archytas of the Greek city of Tarentum. But the Chinese claim that one of their generals, Han Sin, invented the kite in 206 B.C. for use in war.

How Kites Are Used

Scientific Use of the Kite began three years before Benjamin Franklin's famous experiment. In 1749 Alexander Wilson and Thomas Melvill of Glasgow, Scotland, fastened thermometers to kites to record the temperature of clouds. They used kites in a series, or *train*. They sent up the first kite, carrying the thermometer, until it could lift no more string. Then they attached the bottom end of that string to another kite which rose to its limit and allowed the upper kite to rise still higher. More kites were added until the string could stand no more. As a slow-burning fuse burned through, the thermometer dropped to the ground, trailing a white ribbon which made it visible. The author of this article, Paul E. Garber, used kite trains during World War II for sending up radar reflectors.

In 1752 Franklin brought electricity out of the sky with a kite, a string, and a key. Franklin hoped to show that nature's tremendous displays of electricity in lightning were the same thing as the feeble electric sparks scientists of the day were producing in their laboratories. He formed a square kite by using two sticks of equal length crossed at their centers and covered with a large silk handkerchief. To the stick which formed the upper corner he attached an iron wire. He flew the kite with a hemp string, but at the ground he attached a long silk ribbon to serve as an insulator. Near the knot by which the line and ribbon were joined he tied a large brass key. The kite rose into a dark thundercloud and soon Franklin noticed that the strands of the string were beginning to bristle with electricity. As rain wet the string, it conducted more electricity. Franklin stood in the shelter of a shed, keeping the silk ribbon dry for self-protection, then cautiously reached out his knuckle to touch the key. A series of sparks jumped from the metal key to his finger. He thus proved that lightning and electricity are the same. We now know that his experiment was a dangerous one, for he might have been killed by lightning.

In 1883, in England, Douglas Archibald attached an anemometer, or *wind meter*, to the line of a kite and measured wind velocity 1,200 feet up in the air.

Tailless kites can fly higher and at steeper angles than other kites. The people of Siam and other Far Eastern countries developed kites without tails many years ago.

During the early 1900's the kite played an important part in the United States Weather Bureau's forecasts. The Bureau used the Hargrave kite, or *box kite*, invented about 1892 by Lawrence Hargrave of Australia. The Bureau's kites were made of spruce wood and covered with cloth. Three or more large kites were flown in trains strung along a line of piano wire. The highest kite recorded barometric pressure, temperature, wind velocity, and humidity by means of a small instrument called a *meteorograph*.

Other Uses of the kite include their use in building bridges. A kite line was used for starting the building of

the suspension bridge at Niagara Falls. Once the line was carried across the gorge, a heavier line was attached to it and drawn across.

Several men used kites in their efforts to design a successful airplane. One of them was Alexander Graham Bell, inventor of the telephone. He made a large and improved Hargrave kite which carried Lieutenant Thomas Selfridge of the United States Army to a height of 175 feet. Bell and a group of engineers went on to design a number of aircraft, several of which made successful powered flights between 1907 and 1909.

Kite photography is a popular pastime. Douglas Archibald took photographs from a camera attached to a kite as early as 1887. William Eddy used kites to take hundreds of photos during the Spanish-American War.

When Guglielmo Marconi first successfully sent a radio signal across the Atlantic Ocean in 1894, he used a kite to elevate the antenna at the receiving station in Newfoundland. The kite used was of the man-lifting type developed by Baden F. S. Baden-Powell for use in the Boer War. Since then, kites have often been used in sending and receiving radio signals.

War Kites. A sturdy target kite 5'x5', of the Eddy type, was used in World War II for ground-to-air gunnery practice. These kites could be controlled so that they moved like enemy airplanes. They were invented by the author of this article.

A kite was the regular equipment of many life rafts used in World War II. Flown from the raft, the kite served as a guide to searching airmen or sailors.

The Kite-Flying Code is a set of rules for the kiteflier to follow. Here are some of the rules he observes:

He does not use metal in making his kite, because it might attract lightning.

He never flies his kite near telephone or trolley wires, high-voltage wires, or transmission towers. Kite fliers have been killed when their kites touched electric wires.

He does not fly his kite in a thunderstorm because of the danger of being struck by lightning. For the same reason, he *never* uses a wire or wet string for a line.

How to Make a Kite

The Eddy Kite is a two-stick kite. It flies even in a light wind, and is tailless. It was developed and improved by William A. Eddy, an American, in 1890.

Prepare a bow-stick and a spine-stick from bass, pine, or spruce. Each should measure $\frac{1}{4}$ inch by $\frac{3}{8}$ inch by 42 inches. Cut a notch at each end of each stick. Reinforce these ends with thread or string. Attach the center of the bow to the spine $8\frac{3}{8}$ inches from the top end of the spine. Lash the two sticks together with light string and small blocks. Attach a strong string to one end of the bow. Bend the bow back until the distance between the center of the bow and the bow string is also $8\frac{3}{8}$ inches. Finish stringing the bow by tying the loose end of the string to the other end.

Next, outline the kite with a six-ply cotton string. Pass this string around the entire frame in the notches of each stick. Tie the ends of the string near the lower spine end. Be sure the crossing axis of the frame is square and the left and right sides of the kite are exactly alike and well balanced.

Cover the kite with tissue paper, crepe paper, or light



A Box Kite Carrying a Radio Antenna goes aloft from a rubber life raft. When the kite reaches the proper height, the

men in the boat will signal their position at sea and call for help by using a portable hand-powered radio sending set.

United States Rubber Co.

wrapping paper. Tissue paper usually gives the best flying performance. Two or more sheets may have to be glued together to obtain a piece large enough to cover the entire kite. Place the kite on the paper, with the bow facing the paper. Cut the paper at least two inches outside the string on all sides of the kite. Turn only one inch of the margin over the frame string and glue to the main body. This will give a loose and baggy cover.

A tailless kite must have a short line called a *bridle*. Either the six-ply cotton twine or a fish line will make a good bridle and line. Attach the bridle at the lower end of the spine, and at a point about 7 inches from the top. Locate the bridling point by laying the bridle flat against the surface of the kite. The flying line should be tightly knotted at a point slightly above the corner of the kite. Shift this bridling point up or down a fraction of an inch at a time to adjust the flying angle. Move it downward if the kite rises too high and tends to flop and dip. Move it upward if the kite does not rise to an angle of at least 60 degrees.

The Conyne Kite is one of the best fliers of all winged box kites. It was invented by an American, Silas J. Conyne, in 1902.

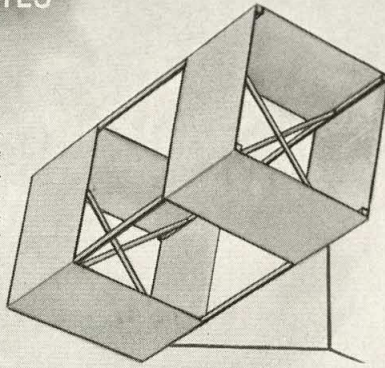
The framework of the kite is made from four sticks of pine, bass, or spruce. These measure $\frac{1}{4}$ inch by $\frac{5}{16}$

inch by 42 inches. The pieces are connected by two braces measuring $\frac{1}{4}$ inch by $\frac{5}{16}$ inch by 14 inches. Cut a notch at each end of both spine-sticks and the cross-stick. Bind these ends with thread or string. Tie the cross-stick securely to the spines 14 inches from the top of the frame. This is only a temporary binding until the kite has been strung and covered. Place the two temporary adjusting braces between the spines. Next, outline the kite frame with fish line or strong cotton string. The string must be passed around the entire base frame in the notches of the sticks. Tie the ends of the string at a point at the bottom of the kite between the spines.

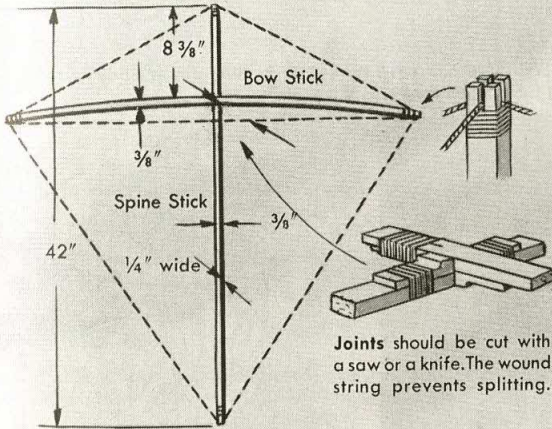
The Conyne kite can be covered with tissue paper, wrapping paper, or cambric cloth. Usually cloth gives best results. Cover the wings first. Cut two pieces of cloth measuring $14\frac{3}{8}$ inches by $42\frac{3}{8}$ inches for the two enclosed parts, or *cells*, and hem the edges. Pass the cloth for one cell around top part of spines and sew ends together at the front. This forms the front edge of the upper cell. Attach cloth with tacks to the back of the spines. Do not hammer tacks all the way in. Attach the other cell to the lower part of the spines in the same way. Insert the front stick, forming the leading edge of both cells. Cut two pieces of cloth to fit over the wings and string. Attach the straight edge of each wing to

HOW TO MAKE KITES

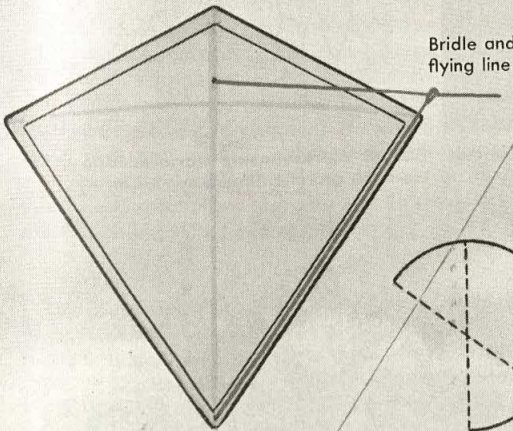
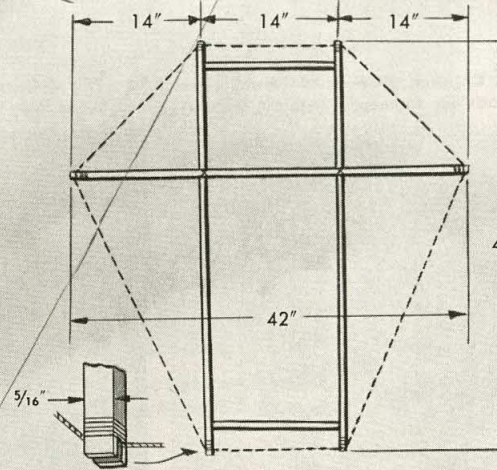
The **Box Kite** is 42 inches long with cells 21 inches square formed of light cloth 12 inches wide. At right are shown details of how cross braces are fitted, and a strong knot for tying flying line to bridle.



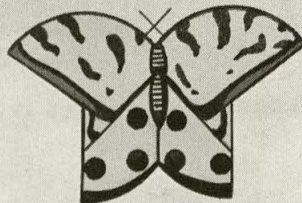
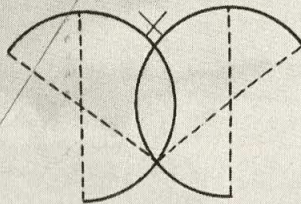
The Eddy Bow Kite



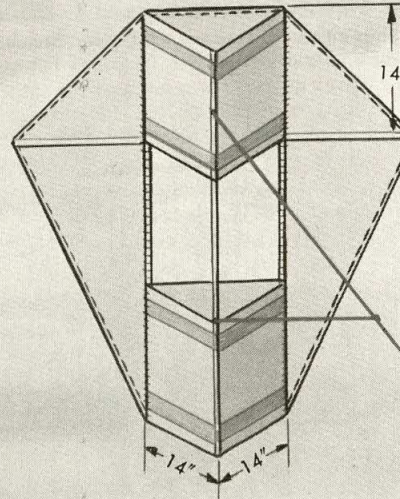
The Conyne Winged Kite

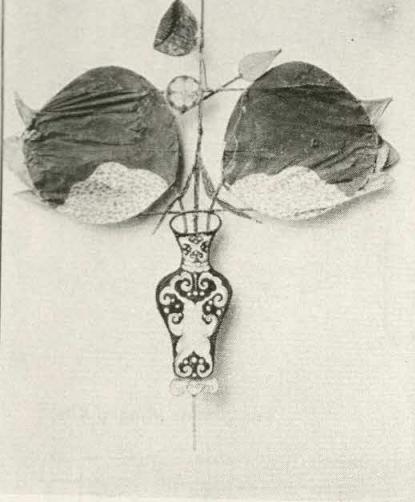


Tissue Paper is loosely attached and the edges are reinforced with paper.

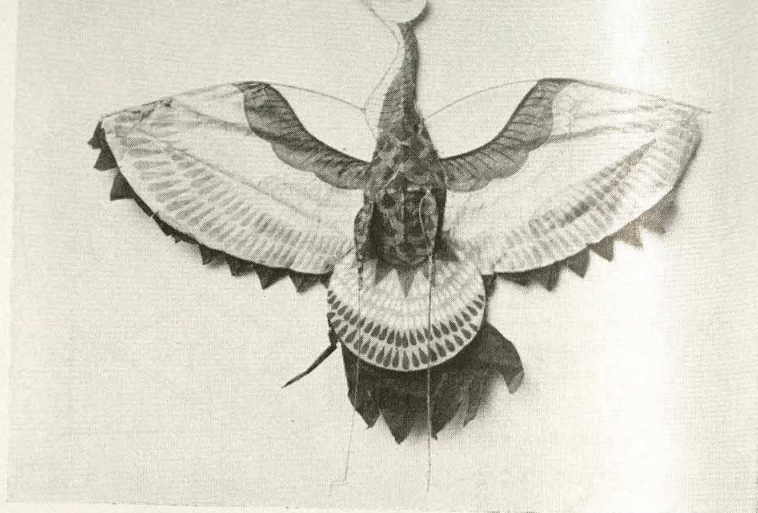


The **Butterfly Kite** is made of bent sticks held in place by string. The covering is colored tissue paper.





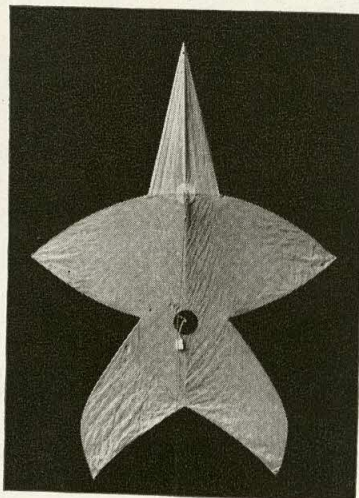
A **Chinese Flowerpot Kite** has petals at each side to keep it steady in the air.



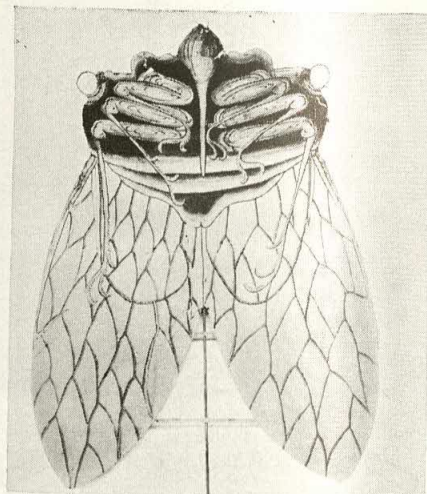
This **Chinese Stork Kite** has legs attached to its fiber-paper body by wire loops. They hang down when the kite is in the air.



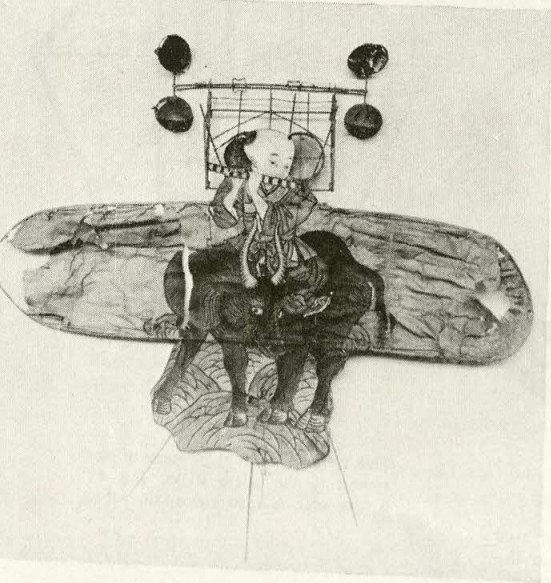
Shaped Like a Lantern, this Chinese kite is gaily decorated.



Siamese Kites have very long bridles. This kite is about three feet tall.



Skillful Workmanship was needed to make this graceful Chinese insect kite.



When the Wind Turns the Cups at the top of this Chinese musical kite, they operate clappers which strike the gongs.



The Artistic Skill of the Chinese in making kites is shown in this highly decorated and clever design of a woman.

Natl. Air Museum



Chicago Natural History Museum

In China, Kites' Day Is Celebrated on the ninth day of the ninth month. Men, women, and children take part in the festi-

val and the skies are filled with kites of all shapes. This old print shows such a celebration about 100 years ago.

back of spine with tacks. Fold the outside edges around the string and sew the hem. Now, proceed to sew the cloth to the spines wherever you have used tacks. Remove all the tacks. If you use paper to cover the kite, fasten the paper to the spines with glue.

Use a seven-ply cotton twine or a semicord for the bridle and kite line. You can now remove the temporary string that was used in lashing the cross-stick to the rear spines and adjusting braces. By stretching the outline string you can also remove the cross-stick and roll up the kite when it is not in use.

Kite Customs

In China the ninth day of the ninth month is set aside as Kites' Day. On that day thousands of kites shaped like dragons, fishes, birds, and butterflies float over cities and towns throughout the country. A legend tells that hundreds of years ago a man dreamed that a misfortune would happen to his household on a certain day. On that day he took his family out to a lofty hill and amused himself with flying kites. He returned in the evening to find his house destroyed and his animals buried in the ruins. Kites' Day celebrates the saving of this family. Each colorful kite is supposed to float away evils which might attack its owner.

The Japanese, Koreans, Maoris, and Malays have made interesting kites for hundreds of years. They have designed bird kites with movable eyes, dragon kites with shiny scales, and gay kites with whistles. Kiteflying is an important part of the Boys' Festival held on May 5 in Japan. During the Boys' Festival a *carp kite* is flown for every boy in the household. The Japanese symbol for

courage is the strong and brave fish called the carp. Each fish floating in the air with its wide mouth open looks like a carp swimming upstream.

Many American communities conduct kite tournaments for boys and girls. Prizes are awarded for the most artistic kites and those which pull hardest and fly highest. Other awards are given for the best-made kites and for unusual designs. In some contests, parachutes are dropped, or gliders launched, from kites. The kites may be divided into various groups, such as kites with tails, tailless kites, box kites, and combination types. They may also be grouped into kites over three feet long and those under three feet, or by the age of the contestants. Every tournament should also include a kite hospital to mend kites.

PAUL EDWARD GARBER

See also SAFETY (color picture, Safety at Play).

Outline

I. How Kites Are Used

- Scientific Use of the Kite
- Other Uses
- War Kites
- The Kite-Flying Code

II. How to Make a Kite

- The Eddy Kite

B. The Conyne Kite

III. Kite Customs

Questions

- What did Benjamin Franklin prove by using a kite?
- What kinds of kites are flown on May 5 in Japan?
- Who invented the tailless kite? The box kite?
- How were kites used by the Weather Bureau of the United States during the early 1900's?
- What uses have been made of kites in wartime?

KITIMAT

KITIMAT, *KIHT ih mat*, B.C. (pop. 9,676; alt. 150 ft.), is a new city carved out of low, wooded land at the head of Douglas Channel on the North Pacific Coast. Kitimat lies 400 miles north of Vancouver. For location, see **BRITISH COLUMBIA** (color map).

In 1951, the Aluminum Company of Canada started building a huge new aluminum smelter and the town of Kitimat to house workers' families. It picked this site because of its harbor, and the area's abundance of water to provide inexpensive hydroelectric power. The company built Kenney Dam east of the mountains to reverse the eastward flow of the Nechako River, and created a 350-square-mile water reservoir. A 10-mile tunnel through the Coast Mountains carries the water to the western side of the mountains. There, the water drops to a power plant built inside the mountains at Kemano, 50 miles south of Kitimat. Power lines carry the power generated at Kemano to the Kitimat smelter. The town was planned scientifically by city planners. It has curving streets. Kitimat's residential area is east of the channel mouth and the smelter is southwest of the mouth.

RODERICK HAIG-BROWN

KITTATINNY MOUNTAINS. See **NEW JERSEY** (Land Regions).

KITTEN. See **CAT** (Raising Kittens).

KITTIWAKE, *KIT ih wayk*, is a gull that gets its name from its plaintive cry. Kittiwakes live in the Arctic regions of Europe, Asia, and North America.

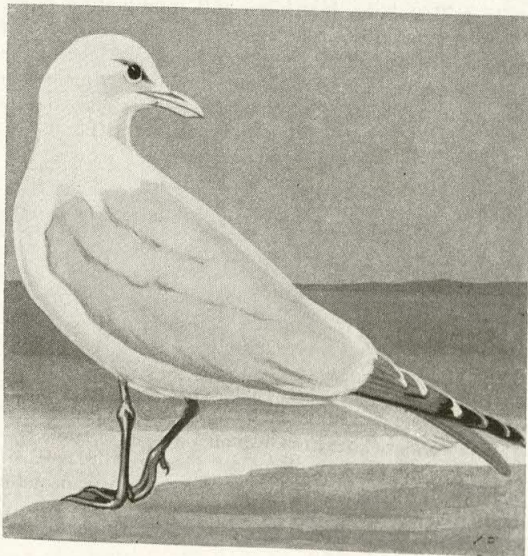
The adult kittiwake is between 16 and 18 inches long and is white with bluish-gray back and black-tipped wings. It has a yellow beak, and brownish-black or red legs.

Kittiwakes make their nests of seaweed. Large numbers of the birds build nests close together on rocky ledges. They lay two or three spotted eggs.

Scientific Classification. The kittiwake belongs to the family *Laridae*. The common kittiwake is genus *Rissa*, species *tridactyla*.

ALEXANDER WETMORE

The Hardy Kittiwake is sometimes called the frost, or winter, gull because it is able to stand severe cold.



KITTREDGE, GEORGE LYMAN (1860-1941), was an American educator and an authority on Shakespeare and early English literature. He wrote books on Shakespeare, Geoffrey Chaucer, English grammar, and Anglo-Saxon literature; and on English and Scottish ballads and folk songs. Kittredge combined common sense with vigorous analysis. He was born in Boston, and taught at Harvard University for 48 years. CLAUDE A. EGGERTSEN

See also **SHAKESPEARE, WILLIAM** (Popular Editions). **KITTY HAWK**, N.C. See **AIRPLANE** (The Wright Brothers); **NORTH CAROLINA** (National Parks, Forests, Historic Sites, and Memorials); **WRIGHT BROTHERS**.

KIVA. See **CLIFF DWELLERS** (Way of Life); **PUEBLO INDIANS** (Way of Life).

KIWANIS INTERNATIONAL, *kee WAH nis*, is an organization of local clubs to which businessmen and professional men belong. There are more than 4,800 Kiwanis clubs in the United States and Canada, with a total membership of about 260,000. Each club has two representatives from each business and professional group in the community. They are chosen for their success in their professions and for their interest in community affairs.



The Kiwanis Emblem and lapel button has white letters on a blue background.

Program. Kiwanis serves the community in many ways. Members of Kiwanis sponsor boys' and girls' activities, give vocational guidance, and take part in community drives, such as safety campaigns and fund-raising campaigns. They support many different community projects ranging

in purpose from new hospitals to good roads. Kiwanians also take part in public affairs, and work toward the development of better business and professional standards.

Kiwanis clubs meet every week. An outstanding speaker usually gives a talk. Through these meetings, the members have an opportunity to make valuable friendships and broaden their interests.

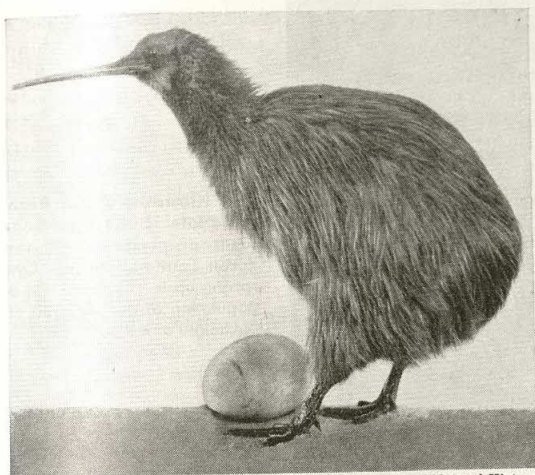
Organization. Each Kiwanis club has complete control over its own affairs. District organizations unite the local clubs. The 30 Kiwanis districts make up the international organization of Kiwanis. Kiwanis maintains international headquarters at 101 E. Erie St., Chicago 11, Ill. A monthly magazine is published, and an international meeting takes place each year.

Kiwanis was founded in Detroit in 1915 as a service organization. The name *Kiwanis* comes from an old Indian term that means *we make ourselves known*. The club motto is, "We build."

O. E. PETERSON

KIWI, *KEE wih*, is the name which has been given to a New Zealand bird because of its strange cry. It is about the size of a hen and has a long, slender beak which sticks out from its head like a knife. The beak has nostrils near the tip. The wings are concealed and cannot be used to fly. The bird has the remains of what was once a tail, and its body is covered with grayish-brown feathers which look like hair.

The kiwi hunts food at night and hides in the daytime. It lives in the woods or hilly country. A kiwi rolls



American Museum of Natural History

The Kiwi Is Found Only in New Zealand. The name comes from a peculiar cry which it makes. Its wings are very small and are quite useless for purposes of flight.

up like a ball when it sleeps. The birds are timid and run away when anyone comes near. They eat worms, insects, and berries. They scratch nests in a burrow and lay one or two white eggs. The eggs are oval-shaped and weigh about one fourth as much as the female.

New Zealand laws protect the bird. Otherwise it would soon be extinct, because New Zealanders are fond of its meat, and the kiwi multiplies very slowly.

The term *kiwi* was used during World War II for men in the air corps who did not fly.

Scientific Classification. Kiwis belong to the family *Apterygidae*. The best-known kiwi is genus *Apteryx*, species *australis*. ALDEN H. MILLER

KLAIPEDA. See MEMEL.

KLAMATH INDIANS, KLAM uth, were a group of tribes who lived along the Klamath River in Oregon and California. In 1864 the Klamath were given a reservation beside Klamath Lake, at the base of the Cascade Range.

KLAMATH MOUNTAINS. See CALIFORNIA (Land Regions).

KLAMATH RIVER, KLAM uth, rises in southern Oregon, flows through northern California, and empties into the Pacific Ocean. Three smaller rivers, the Trinity, Scott, and Salmon, empty into the Klamath.

KLAPROTH, MARTIN HEINRICH. See URANIUM; ZIRCONIUM.

KLAR RIVER. See SWEDEN (Location).

KLEE, clay, PAUL (1879-1940), ranks among the masters of contemporary art. He was one of the most original artists of his time. Klee's thousands of paintings, drawings, and prints are small masterpieces of fantasy, wit, and poetic invention. They express his highly imaginative vision of the world and its inhabitants. Although he was associated with many German expressionist artists and is considered a forerunner of Surrealism, Klee's work is independent of any art movement. One of his paintings, *Fish Magic*, appears in color in the PAINTING article.

Klee was born in Bern, Switzerland, and lived for many years in Germany. He taught at the Bauhaus, Germany's famous school of design. He lived in Bern from 1933 until his death.

GEORGE D. CULLER

KLEIBER, KLY ber, ERICH (1890-1956), was a Viennese conductor. He became general music director of the Berlin State Opera at the unusually young age of 33. In addition to conducting Mozart and Beethoven, he gave outstanding performances of such works as Alban Berg's *Wozzeck* and Darius Milhaud's *Christophe Colomb*. Kleiber left Germany in 1933, but returned after World War II.

IRVING KOLODIN

KLEMPERER, OTTO (1885-), a German conductor, was principal conductor of the Los Angeles Philharmonic Orchestra from 1933 to 1939. He served as general music director of the Berlin State Opera from 1926 to 1933, and there conducted distinguished performances of contemporary operas. The Nazi regime drove him from Germany. He was born in Breslau (now Wrocław, Poland). Klempere conducted at the Budapest opera from 1947 to 1950, and then appeared as a guest conductor in many cities.

DAVID EWEN

KLEPTOMANIA, KLEP toh MAY nih uh, is an irresistible impulse to steal things. The word *kleptomania* comes from two Greek words meaning *to steal* and *madness*. Kleptomania was once thought to be a form of insanity. But today most psychologists believe that kleptomania is a social illness that can be cured. The kleptomaniac steals to satisfy some deep need in his personality. He can be cured only when the source of this need is understood.

Kleptomania and shoplifting are different. The shoplifter picks out something he wants to steal, and tries to get away before he is caught or forced to pay for the stolen goods. The kleptomaniac may take any article that attracts his attention. He generally does not need the things that he steals, and he frequently makes no attempt to conceal the fact that he has stolen. When a person is taken to court for stealing, kleptomania is not regarded as a defense, according to the law. It may be used as a defense if positive proof can be shown that the kleptomaniac cannot tell what is right from what is wrong.

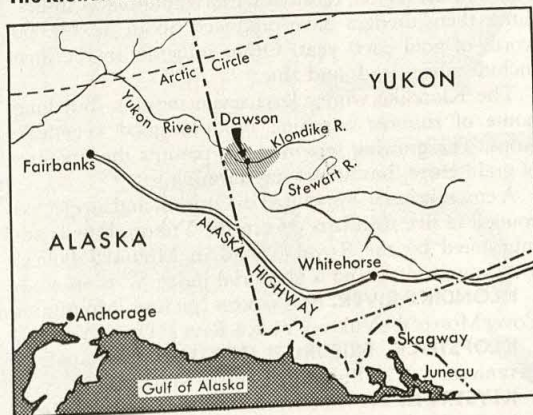
WILLIAM S. SADLER

KLINGSOR. See OPERA (Parsifal).

KLIPSPRINGER. See ANTELOPE.

KLONDIKE is a region in the Yukon Territory of northwestern Canada, where one of the world's greatest gold rushes took place. The region covers about 800

The Klondike District Is the Shaded Area Around Dawson.





Brown Bros.

The Klondike Gold Rush in the late 1890's drew thousands of prospectors to the Yukon Territory. Dawson City sprang up in 1898 and had a population of over 40,000 at the height of the gold rush.

square miles, including the Klondike River and its tributaries. See **GOLD RUSH; YUKON (History)**.

On Aug. 17, 1896, George W. Carmack, his Indian wife Kate, and her relatives found a large quantity of gold in the gravel of a creek he named the Bonanza. Residents of Dawson City celebrate this date as "Discovery Day," and it is a territorial holiday. An earlier prospector, Robert Henderson, had found some gold in Gold Bottom Creek, and had suggested that Carmack search for gold in the area.

When Carmack and the others recorded their claims at 40 Mile, a mining camp 50 miles from Dawson City, most of the miners there moved up to Bonanza Creek. News of the rich strike did not reach the outside world until June, 1897, when the steamship *Portland* arrived in Seattle, Wash., with a ton of gold from the region. Word of the gold strike spread around the world. It brought a stampede of prospectors to the Klondike in the fall of 1897, and an even greater one in 1898. But few of the men made fortunes. The good claims were staked before most prospectors arrived. See **DAWSON**.

By 1928, \$200,000,000 worth of gold had been produced in the region, mostly by individual placer mines. Since then, dredges have produced about \$2,000,000 worth of gold each year. Other minerals in the area include silver, lead, and zinc.

The Klondike winter lasts seven months. But long hours of summer sunshine produce good vegetable crops. The growing season rarely permits the ripening of grain crops, but allows hay farming.

A commissioner, appointed in Ottawa, and an elected council of five members govern the Yukon. Law is administered by the Royal Canadian Mounted Police, local magistrates, and a territorial judge. W. D. MACBRIDE

KLONDIKE RIVER. See **YUKON** (picture, Mountains Cover Most of the Yukon); **YUKON RIVER** (Upper Yukon).

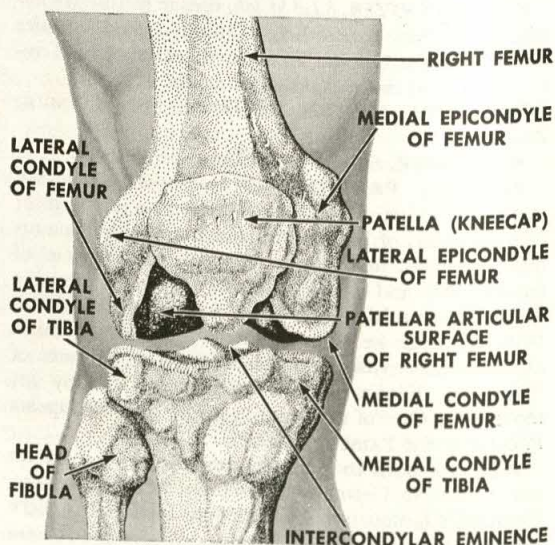
KLOPSTOCK, FRIEDRICH GOTTLIEB. See **GERMAN LITERATURE** (The Storm and Stress Movement).

KLYSTRON. See **ELECTRONICS** (Microwave Tubes).

KNEECAP, or PATELLA, *puh TELL uh*, is a shield-shaped bone located in front of the knee joint. The apex of the bone, which is like the tip of a shield, points downward. Although the knee is the largest joint in the body, it is covered in front only by skin and ligaments. The patella protects the joint. It also serves as a pulley across which tendons from the lower portions of the leg to the thigh can work.

The patella is enclosed in a large tendon formed by the merging of four tendons from four thigh muscles. These muscles straighten the leg and move the thigh forward. A tendon from the tip of the patella attaches to the center of the *tibia*, or shinbone. Anatomists class the patella as a *sesamoid* bone because it develops within a tendon. A sesamoid bone is not actually attached to

The Knee Is a Joint in the Middle Part of the Leg.



a tendon as most other bones are, but rather is enclosed within the tendon itself.

In front of the patella, just beneath the skin, lies a sac filled with fluid. This sac is called the *prepatellar bursa*. When it is irritated or bruised, or when injury causes bleeding into it, swelling results. The swelling is called *prepatellar bursitis* or "housemaid's knee" (see *BURSITIS*; *HOUSEMAID'S KNEE*). *Hydroarthrosis*, or "water on the knee," is a different condition. It is caused by inflammation, infection, or injury to the cartilages or membranes that are located in the knee joint itself.

MARSHALL R. URIST

KNICKERBOCKER, *NICK* or *BAHK* or, **DIEDRICH**, was the pen name that Washington Irving used to sign his *History of New York*. He probably took the name from that of a prominent family which came to New York from The Netherlands in 1674, and later settled in Dutchess County, New York. See also *IRVING*, *WASHINGTON*.

KNICKERBOCKER, FATHER, is a humorous term for New York City. It comes from Washington Irving's book, *Knickerbocker's History of New York*. See also *IRVING*, *WASHINGTON*.

KNIFE is probably the most useful of all the common tools used by man. The knife was one of the first tools developed by the cave man. He sharpened and ground thin pieces of flint and quartz to make knives for skinning animals and cutting meat.

Throughout history the knife has served man both as a tool and as a weapon. As a tool, the knife today is used in many industries. A different kind of knife is used for each particular task. The knife has even been used to create works of art. Many artists use palette knives to paint pictures with broad splashes of color and rugged lines. The sculptor's knife is his most important tool when he is working with ebony and ivory. In medicine, special knives called *scalpels* serve as important tools for surgeons.

The knife was one of man's first weapons. Throughout the Middle Ages and the Renaissance, knives in the form of daggers were the favorite small weapons of soldiers. In pioneer days, American frontiersmen used the Bowie knife both as a weapon and as a tool. Even

during World War II, in which most weapons were complicated and scientific in nature, the commando knife was used in hand-to-hand fighting.

Pocket Knives are usually made of steel hammered into shape, or *forged*, by hand. The blades are made from strips of steel which come in the right width and thickness from the steel mills. These strips are cut into working lengths. Then the ends are heated.

The blade is shaped roughly with a hammer, by a process called *moolding*. Then it is cut to exactly the right length, leaving enough over for a section called the *tang*, to fit into the handle. After the tang has been shaped, the blade is reheated and hammered. A groove called the *nail mark*, is cut into the blade so that the thumbnail can be used to open the knife. This process is called *smithing*.

The blade is hardened by bringing it to a red heat and then dipping it suddenly in cold water. The tang is left soft so it can be filed easily and drilled and fitted to the handle. Now the hardened blade is tempered.

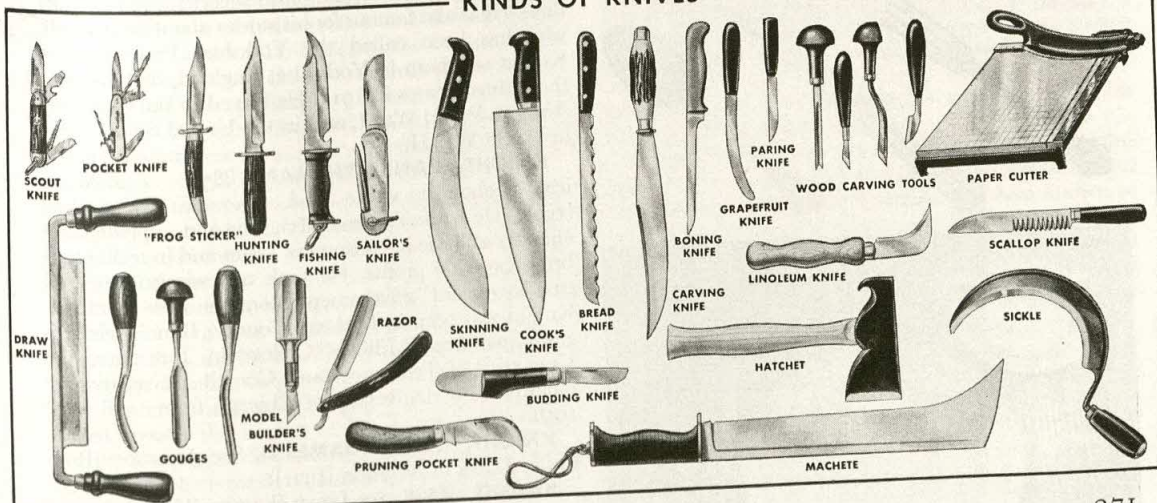
Tempering toughens the blade, which is slightly brittle in its early state. The degree of toughness depends on the temperature to which the blade is heated. This temperature can be determined by the color of the steel. Steel which is heated to a red-brown color has a higher degree of temper than steel heated to straw color. After the desired temper has been reached, the steel may be cooled either quickly or slowly, as only the heating affects temper.

The tempered blade is sent to the grinder, who places the tang in a holder which he grasps as he holds the blade against a grindstone to sharpen it. A final finishing is given the blade after it is fitted to the handle.

Other parts of the knife, such as the spring which controls the opening and shutting of the blade, are made by the *material maker*. The various parts of the knife are put together by the *cutler*, who also drills, files, and polishes the handles. Knife handles are made of ivory, pearl, silver, gold, plastics, tortoise shell, and various woods. They are polished on power-driven wooden wheels and then buffed with a cotton cloth.

Mutual of Omaha

KINDS OF KNIVES



KNIFE, FORK, AND SPOON

Table Knives are made in much the same way as pocket knives. The expensive kinds are hand-forged from a fine grade of steel called *shear* steel. Cheaper table knives are forged by a machine called a *goff-hammer*. These knives are made of cast steel, which is more brittle than shear steel. Power-driven machinery punches holes in the tangs and grinds the blades, but the finishing is done by hand.

In the United States, table knives are manufactured mostly by machinery. The cost of the knife goes up in direct proportion to the amount of handwork done on it. The cheapest knives are made in a single piece and entirely by machine. Table knives which are used for cutting soft substances, such as bread, have a rougher, thinner edge than the ordinary pocket knife. Many knives used on the dining table are made wholly of metal. They may be in one piece, and plated with either nickel or silver.

Knife Safety. Knives can be dangerous as well as useful. Children and adults should always use great care when handling knives. They should never be stored within reach of young children, and should be kept covered or sheathed when not in use. Never hand a person a knife with the point facing toward him. Because of the danger of knives, many states have laws that prohibit a person from carrying a knife of more than a certain length.

WALTER R. WILLIAMS, JR.

See also BOWIE KNIFE; DAGGER; KNIFE, FORK, AND SPOON; MACHETE; ULU.

KNIFE, FORK, AND SPOON. A baby eats his first bites of solid food with a spoon. Then, as he grows older, he begins to use a fork, and, soon after that, a knife. When the child eats with a spoon, it is only as a necessary and easy way to get food into his mouth. At this period of his life, he is conscious of eating only as one of the necessary things of life.

Then, as he begins to realize that eating can also be a social occasion, he tries to be neater about his eating

and is careful not to drop food off the spoon. He notices that some foods are very hard to scoop up on a spoon, but easy to spear with a fork. So he begins to use a fork. Then he finds that he needs something to cut some foods apart. Otherwise, he would have to pick up foods such as meat in his hands, and tear them apart with his teeth. So the child begins to use a knife at the table.

A study of the development of the child's eating habits gives us a very good idea of the development of the use of knife, fork, and spoon through the history of mankind. The early caveman, who ate only to keep alive, used crude stone ladles as spoons. Through the early civilization of the Egyptians, Greeks, and Romans, finely shaped spoons of gold and bronze were used instead of ladles.

In 1100, the wife of an Italian nobleman, the Doge Domenico Silvie of Venice, introduced forks into tableware, because she considered herself too delicate to pick up meat and other tough foods with her hands. These early forks were two-pronged affairs and were not widely used, even in Italy, until the Renaissance. In Italy, during the 1500's, forks became a common item of the silverware on the table. Knives also appeared.

Until this time, everyone had carried a knife in his belt and used it at mealtime as well as on any other occasion when a knife was needed. The knife and fork did not become popular in France and England until the middle 1600's. Governor John Winthrop of Massachusetts brought the first fork to America in 1630.

In some of the eastern countries of the world, especially China and Japan, knives and forks never became popular, because in those countries food is served in small pieces. The Chinese and Japanese use two small, tapered sticks to pick up food. These sticks are held in the right hand and used as tongs. The Chinese call these sticks *kwaitze*, which means *quick ones* in English. In the Pidgin English of the Chinese, the word for *quick* is *chop*. And so we generally use the translation, *chopsticks*.

WALTER R. WILLIAMS, JR.

See also KNIFE.

KNIFE SWITCH. See ELECTRIC SWITCH.

KNIGHT, ERIC (1897-1943), was a British-American writer. He wrote *This Above All* (1941), a popular novel about World War II; and *Lassie Come-Home* (1940), a dog story. Both were made into successful motion pictures. He is also famous for his stories about Sam Small, who has been called the Yorkshire Paul Bunyan. Knight was born in Yorkshire, England, and came to the United States in 1912. He served in the Canadian Army in World War I, and in the United States Army in World War II.

GEORGE J. BECKER

KNIGHT, FRANK HYNEMAN (1885-), an American economist, wrote *Risk, Uncertainty, and Profit* (1921). He wrote that such dynamic and unpredictable changes as those in consumers' tastes and in technology bring business profits. He took a pessimistic view of trends toward government controls over business. Knight was born in McLean County, Illinois. He was graduated from Milligan College in Tennessee, the University of Tennessee, and Cornell University. He taught at the University of Chicago from 1928 until 1958.

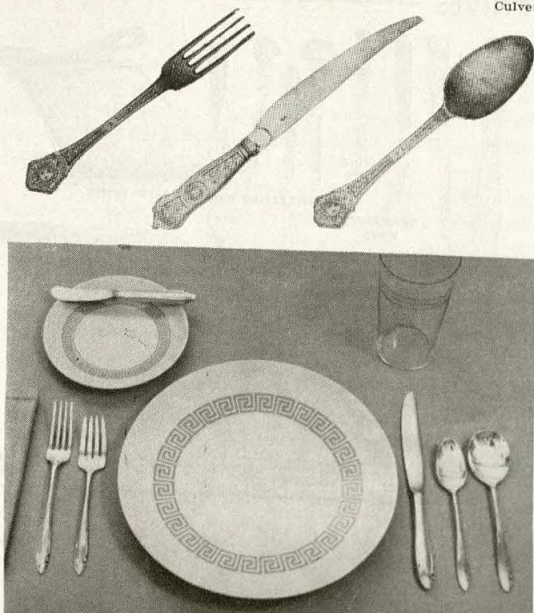
DUDLEY DILLARD

KNIGHT, "JACK," JAMES H. See AVIATION (Red-Letter Dates in Aviation [1921]).

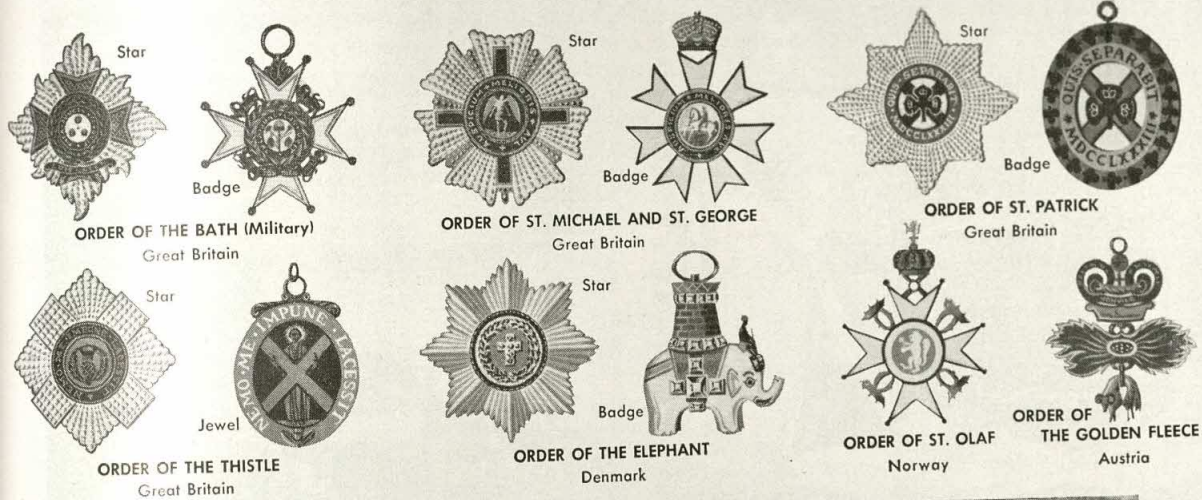
KNIGHT, JESSE. See UTAH (Famous Utahans).

The Knife, Fork, and Spoon used by Louis XIV, king of France in the 1600's, top, had the same basic shape as tableware used today, bottom, but they were more elaborately decorated.

Culver



SOME LEADING ORDERS OF KNIGHTHOOD



KNIGHTHOOD, ORDERS OF. Knights of the Middle Ages banded themselves together in groups called *orders*. They vowed loyalty to their king or prince and formed a military organization to defend his land against enemies. During the Crusades, orders of knighthood fought the Saracens in the Holy Land. The knights who joined these holy orders became monks and took religious vows. The religious orders also had members who were not monks. These men farmed the land, nursed the sick, and carried on various kinds of business. The most famous of the religious orders were the Knights of Saint John, the Knights Templars, and the Teutonic Knights.

Honorary Orders. Honorary orders of knighthood were copied from the early orders of the Middle Ages. They were founded by a ruler or lawmaking body to recognize and reward achievement. In many countries membership in these orders is given for achievement in the arts, the sciences, and business, as well as for bravery.

The chief British orders of knighthood, with the dates of their founding, include: The Order of the Garter (1349); the Order of the Thistle (1540); the Order of the Bath (1725); the Order of Saint Patrick (1783); the Order of Saint Michael and Saint George (1818); the Order of the Star of India (1861); and the Royal Victorian Order (1896). The Order of the British Empire was created in 1917. It has five different classes for men and women. These are Knights (or Dames) Grand Cross, Knights (or Dames) Commander, Commanders, Officers, and Members. A knight who does not belong to any special order is known as a *knight bachelor*.

In Great Britain, membership in an order entitles the holder to be called *Sir*. The wife of a knight is called *Lady*. Women who are given the rank of knighthood are called *Dame*.

Other well-known European orders of knighthood and the dates of their founding are the Seraphim of Sweden (1285), the Golden Fleece of Spain and Austria (1429), the Danish Order of the Elephant (1462), the Saint Andrew of Russia (1698), the Black Eagle of Prussia (1701), the Legion of Honor of France (1802), and the Norwegian Order of Saint Olaf (1847).

A person who is made a member of an order of knighthood receives a *badge* or *jewel* at a ceremony called an



Entering a Modern Order of Knighthood. King George VI of Great Britain is shown conferring the title of Knight Commander of the Bath on Lieutenant General Miles C. Dempsey, a British soldier of World War II. The new knight is being touched with a sword—a part of the ceremony called the *accolade*.

investiture. On formal occasions, he wears the *star* of his order on his chest (see picture).

United States. There are no official orders of knighthood in the United States. But several organizations have called their members *knights*. The best known of these groups is the Knights of Columbus, a fraternal order of Roman Catholic men. An organization known as the Knights of the Golden Circle was active between 1861 and 1864.

MARION F. LANSING

Related Articles in WORLD BOOK include:

Crusades
Garter, Order of the
Knights and Knighthood
Knights of Columbus
Knights of Saint John

Knights of the Bath
Knights Templars
Teutonic Knights
Thistle, Order of the

KNIGHTS, TEUTONIC. See TEUTONIC KNIGHTS.



The Vigil, by John Pettie; Culver

KNIGHTS AND KNIGHTHOOD. The word *knight* comes from the Old English word *cniht*, which means a household retainer. Englishmen used the word to describe French mounted soldiers who first came to England after the Norman conquest of 1066. These knights were merely warriors equipped and trained to fight on horseback. Knighthood carried no social distinction, and any man could be a knight. Many lords had knights, who performed household duties in peacetime and fought in time of war. The lord provided armor and horses for his knights.

Between 1100 and 1300, knights became independent, and most of them held some land. As the cost of armor and a war horse increased, only wealthy men could equip themselves to fight as knights. Thus the knights became a class divided from the rest of the community. Entry to their ranks became a mark of honor and distinction. Any man could be made a knight, but this honor usually went to the sons of nobility. The age of knights and knighthood is often called the *age of chivalry*. The word *chivalry* comes from the Old French word *chevalerie*, meaning *horse soldiery*. But the term came to mean the code of behavior that knights were supposed to follow.

Knighthood grew up as part of the feudal system of the Middle Ages. It lasted as long as wars were based on personal combat between individuals. Knights became less important in warfare in the 1300's, because of changing military tactics and the introduction of gunpowder. In England, knighthood is now an honor bestowed on individuals by the ruler in recognition for outstanding merit or service.

Training

A young boy in training to be a knight spent the first years of his life chiefly in the care of the women of his family. During this time, he learned to ride a pony and care for horses.

The Page. When a boy reached the age of about 7, he left home to begin training for knighthood. As a *page*, he joined the household of his father's lord, or of some

Knighthood Was Both Religious and Military. The honor was bestowed on a young man with great ceremony after he had served as a page and a squire. Before he was knighted he confessed his sins and fasted. The night before the ceremony he kept a vigil over his armor as part of the solemn ritual.

great noble, bishop, or king. Here he learned to handle weapons that were smaller versions of those he would use when he grew older. He also learned the code of courtesy and behavior expected of a knight.

The Squire. A boy began his training as a *squire* at 15 or 16. He acted as a *valet*, or personal servant, to the knight who was his master. He set the table and stood behind his master's chair at mealtimes. The squire received serious training as a mounted soldier. He rode with his master into battle and helped him in many ways. In battle, the squire wore silvered spurs to distinguish him from a knight, whose spurs were gilt. The period of service usually lasted about five years. Then the squire was eligible for knighthood.

Knighting. Any knight could bestow knighthood on another. Sometimes men were knighted on the field of battle, but the ceremony usually took place during times of peace. The earliest knighting ceremonies were quite simple. A knight merely buckled on the armor of the squire who was being knighted. Later ceremonies became more complicated. One man buckled on the sword and another fastened the spurs. The squire knelt before the *parrain*, or the man who was knighting him. The latter gave the squire a blow on the back of the neck with the palm of his hand. Later a tap with a sword replaced the blow with the hand. This tap, called the *accolade* from the French word *col*, meaning *neck*, was followed by the words "I dub you knight."

Religious ceremonies became part of the knighting ceremony when the ideals of Christianity became more closely linked with knighthood. Before a squire was knighted, he placed his armor on the altar of a church and confessed, fasted, prayed, and kept vigil before it throughout the night. The next day he bathed and put on special clothing for the ceremony. The pageantry

PAGES, SQUIRES, AND KNIGHTS

THE PAGE

Began training at the age of seven and served until his teens



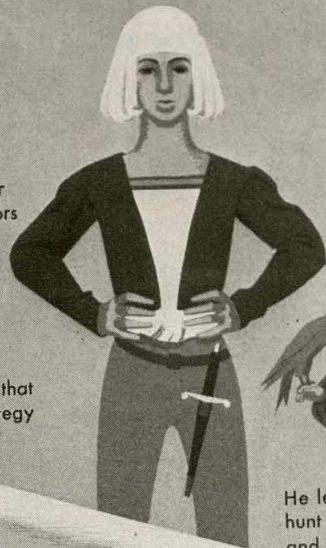
He learned to ride, use arms, and attend his master



Training taught respect for and humility to his superiors



He played games that taught skill and strategy



He learned to hunt with hawks and falcons



THE SQUIRE

After serving as a page, the boy became a squire



He performed advanced services and exercises



Quintain, a sport in which the squire jousted with a dummy, was an important part of his training



Points of his pennon were cut off for service until it became a banner

In battle he served his lord and was always at his side



THE KNIGHT

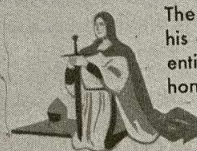
When the squire was about twenty-one, he took the solemn vows of knighthood



A warrior could be made a knight on the field of battle, for great bravery in action



When the squire took his vows he was arrayed in a tunic, and red and black cloaks



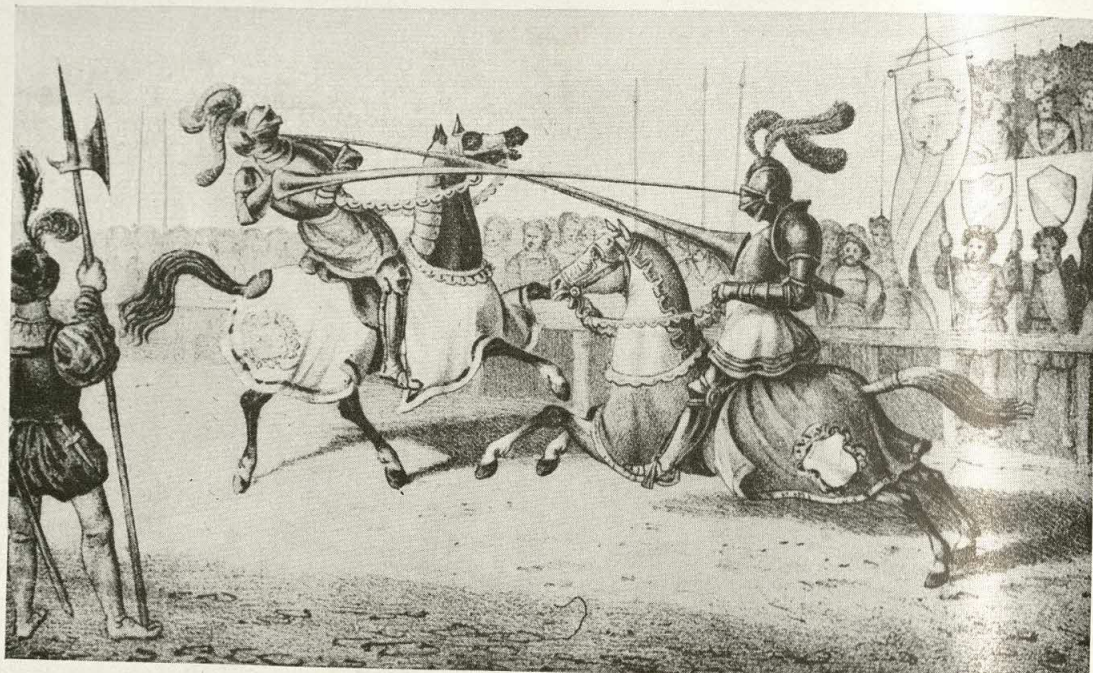
The squire kept vigil over his armor and weapons the entire night before the final honor was bestowed



He received the accolade--a touch on the shoulder with a sword in the hands of his lord or of the king

He was now a knight. He received his arms from the men and women of the court, amid well-earned praise





Bettmann Archive

Knights Dueled Each Other in a tournament if one felt that another had injured his honor. They wore heavy armor and rode powerful horses. They rushed toward each other and each knight

tried to drive his lance through his enemy. Similar matches, or *jousts*, were held for sport. In these duels the knights used blunted wooden lances and tried to knock each other from their horses.

made the ceremonies expensive. Feudal custom allowed an overlord to levy money from his tenants to help pay the costs of the knighthood rituals.

The Code of Chivalry

Chivalry, knighthood's code of behavior, was not fully defined until Christian ideals became part of the knight's way of life. The code of chivalry grew with the songs of the minstrels in the 1000's and 1100's. Their poems show that a true knight had faith and a deep love of the Christian religion. He defended the church and was ready to die for it. He loved the land of his birth, and gave generously to all. His strength served to protect and aid the feeble. A knight championed right against injustice and evil, and never surrendered or flinched in the face of the enemy.

In real life, a knight did not always resemble the ideal knight of the minstrels. His code of honor and loyalty was sometimes applied only to members of his own class, and he often acted as he pleased toward people of low birth. The violent life of the Middle Ages made it difficult to prevent violations of the code. But a knight who was proved guilty of cowardice or other serious misconduct was disgraced by having his sword and his spurs broken.

Clothing and Armor

Clothing. In the 1100's, a knight wore a sleeved under tunic of linen or wool, reaching below the knees. Over this was a sleeveless tunic, open at the sides and fastened with a belt. He had a cloak fastened at the shoulders, and wore long stockings and leather shoes. In the 1200's, the under tunic reached to the ankles, and the knight also wore a fur-lined *surcoat*, which had

long sleeves and a hood that covered his head.

Clothes in the 1300's became more colorful and elaborate. The under tunic covered only the torso, and buttoned down the front. The sleeves buttoned tightly from wrist to elbow. The trousers also fit tightly. Jeweled felt hats and decorated capes became popular.

Fashions in the 1400's went to extremes of decoration and display. The surcoat was pleated, edged with fur, and fastened tightly at the waist with a belt. Shoulder padding and stiffening over the chest created an exaggerated waistline. The sleeves were long, full, and stiff. Shoes became so pointed that the front was often curled up and fastened to the knee with a small jeweled chain.

Armor. The early knight wore a conical helmet with a projection in front to cover his nose. He also wore a long garment of padded fabric or leather covered with interlaced metal rings, called *mail*. In the 1300's, a stronger helmet covering the entire head of the wearer replaced the conical helmet. Patches of plate armor were added to protect those places which the mail did not adequately defend. A strip of plate protected the knee, and the leg between the knee and ankle. The elbows and arms were protected in the same way. Plates of metal, called *pauldrons*, covered the opening in the armor at the junction between the arm and the body. The shield became much smaller and could be shifted to protect the face and head. The lance was the knight's principal weapon, but he also used a sword, mace, and battle-ax. His sword hung on his left side, and a dagger on his right.

In the 1400's, plate armor covered the knight's body completely. A mail collar covered the gap between the helmet and the top of the body armor. A visor, fitted to the helmet, covered the face. The arm pieces were made

of thin strips of metal riveted together for flexibility. Metal gloves, called *gauntlets*, and shoes were made the same way, and similar metalwork covered the legs. Swords became lighter and less cumbersome.

Gunpowder appeared on the battlefield in the early 1300's, and led to armor so heavy that the knight had to be lifted on his horse by a crane. If he fell off during battle, he could not get up without help, and often lay at the mercy of the enemy.

The coat of arms provided the only recognizable feature of a knight when his face was covered. It was painted on his shield and on the surcoat which he wore over his armor. Horses often wore cloth trappings with the coat of arms. The knight's lance carried a *pennon*, a small flag which contained his insignia. His helmet had a crest of feathers or some other light material.

Tournaments

Tournaments developed in the 1100's, probably in France. Large numbers of knights gathered and split into two sides to fight each other. The fights differed little from a real battle, and provided valuable training for war. Fighting lasted all day and ranged over the countryside. The defeated knights either paid a ransom or lost all their possessions. A tournament often caused much violence and destruction in the district where it took place.

The English government opposed tournaments because such large gatherings of armed men could lead to rebellion. As a result, they could be held only with royal permission. Those who broke this rule suffered imprisonment and loss of property. The church supported the



Bertrand du Guesclin Was a Famous French Knight of the 1300's. He was a cunning and hard fighter. But his last words before he died reminded his soldiers that women, children, and poor persons were never their enemies when they were at war.

KNIGHTS HOSPITALERS

ban on tournaments. It refused Christian burial to anyone who died in a tournament.

In the 1200's, English knights met in assemblies called *round tables*. *Jousting*, or combat between two knights, was a popular activity at these meetings. Jousting took place with blunt weapons and was confined to an enclosed field, because the heavy armor used at this time made the knights less mobile than before. The joust soon became a social gathering attended by ladies. In the 1400's, jousting gave way to *tilting*. Two knights charged at each other in the *lists*, or narrow lanes, separated from each other by railings so the horses did not meet. Each knight carried a blunted lance and tried to unseat his opponent.

Knighthood in Literature

During the Middle Ages, the bards of western Europe created stories that mirrored the life of the times and served as models for the behavior of Christian knights. In the 1100's, a group of French poets called *troubadours* began composing songs known as *chansons de geste*. These chansons idealized love, and described the deeds of heroic knights. Some of the troubadours were knights who wrote about their own adventures. Bertrand de Born was an outstanding knightly troubadour. Many European kings, such as Richard the Lion Hearted of England and Alfonso X of Castile, also wrote chansons.

One group of medieval stories made up the Arthurian legend. Arthur was a historical figure of the 400's who became the center of many legends. He supposedly dined with his men at a round table. His knights, including Lancelot and Galahad, were Christian warriors who faced perils and searched for the Holy Grail (see HOLY GRAIL). They protected the weak, and were guided by the love of a lady. The legend of King Arthur first appeared in the work of an English chronicler, Geoffrey of Monmouth. The Norman poet, Wace, used this legend in his work *Le Roman de Brut*. This work was the inspiration of Chrétien de Troyes, who wrote five verse romances between 1165 and 1181. Chrétien was the first to mention the Holy Grail. The Arthurian themes inspired the work of Renaud de Beaujeu in the 1100's and Marie de France, author of the lay *Lanval* written about 1189. Sir Thomas Malory collected the Arthurian legends in his work *Le Morte Darthur*, published in 1485. Malory's work inspired Edmund Spenser's *Faerie Queene*, William Morris' *The Defense of Guenevere*, and Alfred, Lord Tennyson's *Idylls of the King* (see IDYLLS OF THE KING).

Charlemagne rivaled Arthur as the center of legend. He was the model leader of Christendom against the Moslems, and appears in such works as the *Song of Roland* (see ROLAND).

I. J. SANDERS

Related Articles in WORLD BOOK include:

Armor	Homage	Knights Templars
Crusades	Honor	Minnesinger
Don Quixote	Knighthood, Orders of	Minstrel
Feudalism	Knights of St. John	Tournament
Heraldry	Knights of the Bath	Troubadour

KNIGHTS GRAND CROSS OF THE BATH. See KNIGHTS OF THE BATH.
KNIGHTS HOSPITALERS. See KNIGHTS OF SAINT JOHN.

KNIGHTS OF COLUMBUS



The Knights of Columbus emblem has an anchor, a sword, and the Roman fasces.

KNIGHTS OF COLUMBUS is a fraternal benefit society of Roman Catholic men. The Reverend Michael J. McGivney established the society in 1882 in New Haven, Conn. The society now has over 1,100,000 members, and more than 4,400 councils, or local branches, throughout the United States, Canada, Mexico, Cuba, Puerto Rico, Panama Canal Zone, and the Philippines. Roman Catholic

men 18 years of age and older are eligible for membership. There are two classes of members, insurance members and associate members. Insurance members carry the insurance offered by the society. The society also maintains the Columbian Squires for Roman Catholic boys 13 to 18 years old.

The Knights of Columbus gives financial aid to members and their families, and promotes many charitable, religious, educational, social welfare, war relief, and public relief programs. In 1948, the society began a Catholic Advertising Program to make known facts about the Catholic faith and to dispel misunderstandings about it. The program consists of paid advertisements that deal with various phases of Catholic beliefs and practices, and pamphlets that offer more detail on the subject matter of the ads. The society also sponsored the movement that brought about the addition of the words "under God" in the pledge of allegiance to the flag of the United States.

Among the educational contributions made by the society was the founding of the Knights of Columbus Vatican Film Library at St. Louis University. The library contains microfilms of more than 12,000,000 pages from manuscripts and books in the Vatican Library (see VATICAN LIBRARY). The microfilms are available to all scholars. The society has also established a \$500,000 endowment fund for graduate fellowships at the Catholic University of America.

The chief governing body of the Knights of Columbus is the Supreme Council. Officers of state councils and delegates elected by local councils make up the Supreme Council. International headquarters are at Columbus Plaza, New Haven 7, Conn.

LUKE E. HART

KNIGHTS OF LABOR was the name of a national labor organization established in 1869 at Philadelphia, Pa. A disbanded union of garment cutters founded the organization to protect the working classes.

At first, everything about the society was kept secret, except its symbol, a line of five stars. This secrecy was enforced because many other such unions had failed, and because many employers were opposed to organized labor. Membership in the union was open to anyone over 16, with the exception of lawyers, bankers, liquor dealers, and gamblers. Membership grew to about 700,000, but disagreements within the union caused its decline after 1893.

MAURICE P. HUNT

See also LABOR (History).

KNIGHTS OF MALTA. See **KNIGHTS OF SAINT JOHN.** **KNIGHTS OF PYTHIAS,** *PITH ih us*, is a fraternal society to which men of any religion may belong. It has about 250,000 members in the United States and Canada. Lodges are located in cities and towns in these areas. The organization carries on charitable work, and places great emphasis on high moral standards. The Knights of Pythias keep up 14 homes for aged members and their wives and children.

The chief governing body of the Knights of Pythias is the Supreme Lodge. Below it are the district grand lodges and subordinate or local lodges. The organization has its own secret initiation and rites, in which the Bible and the national flag play important parts. There are three auxiliaries: the Pythian Sisters, the Dramatic Order Knights of Khorassan, and the Junior Order Princes of Syracuse.

Justus Henry Rathbone (1839-1889) founded the Society of the Knights of Pythias in 1864 in Washington, D.C. Its headquarters are at 1202 Third St. S.E., Cedar Rapids, Iowa.

MELVIN M. EWEN

See also FRATERNAL SOCIETY.

KNIGHTS OF SAINT JOHN, also called the **KNIGHTS HOSPITALLERS** and the **KNIGHTS OF MALTA**, is a religious order of the Roman Catholic Church. It was founded in the early 1000's in a monastery at Jerusalem.

The monastery was dedicated to Saint John the Baptist, and the monks called themselves Brothers of Saint John, or Hospitaliers. At first their work was limited to caring for pilgrims and for the sick. Later, the order fought in the Crusades and its members became powerful rivals of the Knights Templars. When the order of the Templars was abolished in 1312, the Hospitaliers took over some of the property of the order. The Knights of Saint John were rich and powerful.

When the Holy Land fell to the Saracens, the Hospitaliers moved their headquarters from Jerusalem to the island of Cyprus, and then to the island of Rhodes. The Ottoman Turks conquered Rhodes in the 1500's, and the order moved again, this time to Malta. Here they stayed until 1798, when the island surrendered to French forces led by Napoleon Bonaparte. Soon afterward the British gained possession of Malta. The Knights of Saint John continued to exist as a religious order, but its worldly power was ended.

The Knights of Saint John carried a specially shaped cross when they went into battle during the Crusades. It had eight points and is now known as the Maltese cross. See CROSS (picture).

WILLIAM F. McDONALD

See also KNIGHTS TEMPLARS.

KNIGHTS OF THE BATH belong to one of the oldest orders of knighthood in England. Founded by King George I in 1725, it was originally composed of the king, a grand master, and 36 *knights companions*. Its name comes from the traditional ceremonial bath, symbol of purity. The order is the next highest honor after the Order of the Garter (see GARTER, ORDER OF THE).

The British ruler confers this form of knighthood on military men, scholars, scientists, artists, and distinguished citizens. The order includes three classes: Knights Grand Cross of the Bath (G.C.B.), Knights Commanders (K.C.B.), and Companions (C.B.). Members of the first two classes may use "Sir" before their names.

MARION F. LANSING

See also KNIGHTHOOD, ORDERS OF (pictures).

KNIGHTS OF THE GREAT FOREST. See KU-KLUX

KLAN.

KNIGHTS OF THE MACCABEES. See MACCABEES (fraternal).

KNIGHTS OF THE ROUND TABLE. See ARTHUR, KING; ROUND TABLE.

KNIGHTS TEMPLARS was a military and religious order within the Roman Catholic Church. The Knights Templars fought in the Crusades and became famous for their bravery. They also gained fame as one of the richest and most powerful groups in the Christian world.

The order of Knights Templars was founded in Jerusalem in 1119. Several French knights pledged themselves to the defense of the Holy Sepulcher. Under the leadership of Hugues de Payens of Champagne, they also vowed to defend Christian pilgrims in the Holy Land.

Membership. Knights Templars first limited membership to nobles, who took vows of poverty and obedience. The society grew rapidly. Baldwin II, King of Jerusalem, gave the Knights Templars quarters in his palace, built on the site of Solomon's Temple. This was the origin of their name, *Poor Knights of the Temple*. The Templars adopted the Benedictine rule (see BENEDICTINE). They wore white robes with red crosses. The order came to have four classes of members. The *knights* and *sergeants* were the fighters. The *farmers* carried on the worldly affairs of the order. The *chaplains* took care of the religious needs of all the members.

Program. The pope took the Knights under his special protection, and many European rulers granted them favors. They gained possession of property all over Europe. The Knights Templars played an important part in the battles of the Crusades. It is said the Saracens killed about 20,000 Templars.

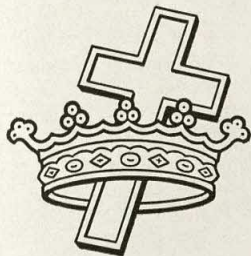
To promote the cause of the Crusades, the Knights Templars established local offices, or Temples, in all the Christian countries. These offices encouraged enlistment in the crusading armies, and took care of funds for pilgrims. The Templars were drawn into the banking business and gained new power and influence.

The ruling princes of Europe, hard-pressed for money, envied the Templars' wealth. Philip IV (the Fair) of France started an investigation of the order in the early 1300's. He ordered all the Templars in France thrown in prison, where they were tortured until they confessed to false accusations of heresy. Templars in England, Germany, Spain, and Portugal also stood trial, but most were acquitted. Pope Clement V was persuaded to abolish the order in 1312. The Grand Master of the Templars, Jacques de Molay, confessed to false charges during the French trials. He later withdrew his confession, but was burned at the stake.

The king of France seized most of the cash wealth of the Templars. The Knights of Saint John received most of their lands.

WILLIAM F. McDONALD

See also KNIGHTS OF SAINT JOHN.



Knights Templars Emblem is used by the Masonic order.

KNITTING

KNITTING, NIHT ing, is a way of making an elastic, porous fabric from yarn by means of special needles. Interlaced loops hang from each other all the way down the fabric like a chain. This is why knitted material often gets a *run*, or *ladder*, if a stitch is broken. The term *knitting* comes from the Anglo-Saxon word *cnyttan*, which means to *tie* or to *knot*.

Knitted fabric stretches more than woven fabric, but it usually returns to its original shape. It is much better than a woven fabric for such garments as sweaters, mittens, and stockings. For example, the neckline of a sweater stretches as it is pulled over the head and then snaps back to the original size to fit snugly around the neck. The wristband of a mitten snaps back to the size of the wrist after it is pulled over the hand.

The art of knitting is older than written history. Men probably got the idea of knitting fabrics as they knotted grasses into nets, mats, and baskets. Some scholars believe that the people of Scotland were the first to knit with wool. The first stocking firms grew up in Nottinghamshire, England, in 1589.

Methods of Knitting. Knitting today is done both by machine and by hand. Most knitted materials are made by machines. Machine knitting is called *warp knitting*. The looms may vary in size from hand-operated looms for home use to large, complicated machines called *chain looms*. Machines can make as many differ-



Fig. 1

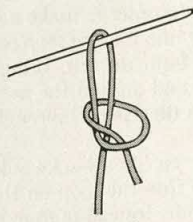


Fig. 2

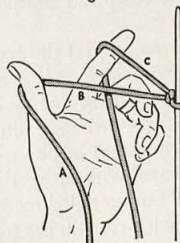


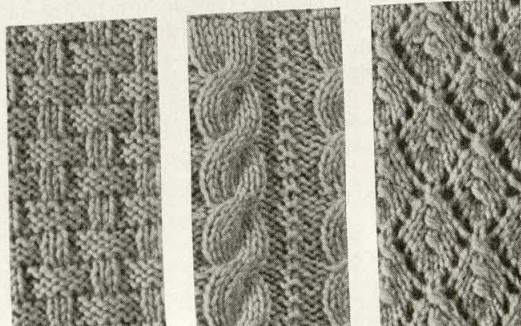
Fig. 3a



Fig. 3b

Knitting Begins when you cast on the first stitch. To begin, form a loop with your finger and slip it onto the needle. Then form a loop with your finger and slip it onto the needle. Then cast on several more stitches to make a firm base. Popular knitting stitches, below, include basket, cable, and leaf stitches.

Bear Brand and Fleisher Yarns



KNITTING

ent patterns as the hand knitter can. See **KNITTING MACHINE**.

Hand knitting is called *weft knitting*. The knitter works with needles and yarn. The needles are slender rods of steel, wood, plastic, ivory, or celluloid. They may be pointed at both ends, or may have a knob at one end to keep the stitches from dropping off. Needles come in a variety of sizes. Thick needles, usually used with thick yarn, make a loose weave. Thin needles, usually used with thin yarn, make a tight weave. A single large, flexible needle is sometimes used for making circular or large articles. Some knitters use three or more needles in knitting socks or mittens. But most knitting requires two needles.

The Two Main Stitches used in knitting are the *knit* and the *purl*. All other stitches are variations of these. Stitches are first *cast on* to the left-hand needle. To cast on the stitches, lay a long end of yarn over the first finger of the left hand. Then cross the piece nearest you over the other strand (Fig. 1 on page 279). Bring the end nearest you up through the loop thus formed and slip the loop onto the needle (Fig. 2 on page 279). Hold the needle parallel to the chest and catch the two hanging threads with the thumb and first finger of the left hand. Put the needle under thread A, over thread B, and behind thread C (Figs. 3a and 3b on page 279).

After you have cast on the number of stitches called for in the pattern, transfer the needle with the stitches to the left hand. Use the second needle in the right hand. In order to make a *knit stitch*, put the right-hand needle into the first loop on the left-hand needle, inserting it from the left. Bring the yarn from right to left under and around the needle in the right hand. This yarn is then pulled through. In this way it forms a new loop.

The *purl* is a backwards stitch. Put the right-hand needle into the loop on the left-hand needle from the right side, instead of from the left. Bring the yarn from right to left over and around the needle, and complete the loop as in the knit stitch.

The Three Major Knitting Patterns are: (1) the *garter* stitch, or plain knitting, where every row is knit across exactly alike; (2) the *stockinette* stitch, where one row is knit and the next row is purred; and (3) the *rib* stitch, where knitting and purling are alternated in one row. The stockinette stitch has a weave with a vertical direction on the right side and a horizontal direction on the wrong side. Fabrics made with rib stitches look alike on both sides, and they also have the greatest elasticity.

Most of the fancy patterns in modern knitting alternate knit and purl stitches in the same row, with each row following a pattern. In addition, stitches may be *dropped*, or carried over from the left-hand to the right-hand needle without knitting. This produces lacy open-work designs. Stitches may be knit together to decrease the size of the fabric. A knitter may also create multi-colored knit designs by carrying bobbins of colored yarn along the back of the fabric, and picking up each color as it is needed on the surface. *Argyle* designs in diamond motifs are especially popular in men's stockings.

See also **JERSEY CLOTH**.

HELEN MARLEY CALAWAY



A Home Knitting Machine (with more than 200 needles) can knit an entire sweater in only 3 hours. It takes about 500 hours to knit a sweater by hand (with only 2 needles).

KNITTING MACHINE was invented in 1589 by a man who became angry at his sweetheart because she paid more attention to her knitting than to him. The man was William Lee (? -1610), a clergyman of Nottinghamshire, England. Lee's machine worked, but year after year he was refused a patent by Queen Elizabeth I because it was feared that the machine would throw hand knitters out of work. Discouraged, Lee went to France, where he later died in prison.

Another Englishman, Jedediah Strutt (1726-1797), of Derbyshire, invented the Derby rib hosiery frame in 1758. This machine knitted a ridged, or *ribbed*, weave like that made around the waistband of sweaters. The Derby rib hosiery frame put machine-knit fabrics in close competition with hand-knit products. The circular knitting machine, invented in 1798 by a Frenchman named Descroix, improved machine-knit fabrics.

Today, factories machine-knit both plain and ribbed fabrics in flat pieces or in tubular form. Different kinds of knitting machines are used for each of these kinds of knitting. The circular machine is the most commonly used. In this, the needles, arranged in rows on a rounded frame, produce a tube-shaped web. The needles have a straight up-and-down motion, produced by cams. Each needle has a hook at the end, with which it draws down the thread and makes a loop. As a stocking or other garment is knitted, the web extends downward through the circular opening between the needles. An attached weight keeps the web in place. One person can tend several machines. Most women's full-fashioned hosiery is knit on flat machines which form the leg and heel in one process. Another machine seams the stocking up the back.

ELIZABETH CHESLEY BAITY

KNOCK. See **GASOLINE** (Kinds); **OCTANE NUMBER**; **TETRAETHYLLEAD**.

KNOCKOUT DROPS. See **CHLORAL**; **ANTIDOTE**.

KNOPF, *k'nahpf*, **ADOLPH** (1882-), an American geologist, became noted for his work on ore deposits and Pre-Cambrian rocks. He headed a committee, organized in the late 1920's, that measured the ages of rocks by the disintegration of radioactive minerals (see EARTH [The Age of the Earth]). Knopf helped write *Physical Geology* (1932), a widely used textbook. He taught geology at Yale University from 1920 to 1951. He was born in San Francisco. CARROLL LANE FENTON

KNOSSOS, *NAHS us*, or **CNOSSUS**, was the capitol of ancient Crete. It was the chief center of Minoan civilization, which flourished in Crete from about 3000 to 1200 B.C. The palace of the city was a great, rambling, four-story building, arranged around a rectangular courtyard. Minoan artists painted frescoes on the walls of the largest rooms. Historians believe that the palace was a religious and governmental center.

The palace at Knossos was destroyed at least twice. Achaeans from the Greek mainland were probably responsible for destroying it about 1600 B.C. But historians do not know who destroyed it the second time, about 200 years later. In 1900, archaeologists led by Sir Arthur Evans discovered many objects of interest in the ruins. They found jars and vases of stone and pottery, statues, metal tools, and clay writing tablets. JOHN H. KENT

See also ACHAEAN; AEGEAN CIVILIZATION; DORIAN; GREECE, ANCIENT (Minoan Civilization); PAINTING (color picture, *Priest King*).

KNOT, *not*, is a unit of speed used for ships and aircraft. It equals one nautical mile an hour. A ship with a 20-knot speed can go 20 nautical miles in an hour.

The nautical mile is 6,076.10333 feet long. It is practically equal to one sixtieth of one degree, or a minute of arc, of the earth's circumference. The nautical mile is equal to 1.1508 statute, or land, miles. To change 4 nautical miles to statute miles, multiply 1.1508 by 4, which equals 4.6032 (4.60) statute miles. The statute mile has only 5,280 feet, and is equal to 0.8690 (.87) of a nautical mile. Four statute miles would be 4 times 0.8690, or 3.4760 (3.48) nautical miles.

The term *knot* came into use in the earlier days of sailing, when ships carried a speed-measuring device called a *log chip and line*. The line was wound up on a reel. The chip, a piece of wood shaped like a quarter of a circle and weighted along its circular edge so that it would float upright, was allowed to drag in the water behind the ship. The weight of the chip caused the line to unreel as the ship moved along. The line was knotted at intervals of 47 feet 3 inches. At the end of the first interval was one knot. Two knots marked the end of the second, and so on. The line was allowed to run for 28 seconds. Twenty-eight seconds are to one hour what 47 feet 3 inches are to 6,076.10333 feet. Therefore, if the log had pulled out 5 intervals of line in 28 seconds, the sailors knew the ship was moving at 5 knots, or 5 nautical miles an hour.

KENNETH M. SMITH

See also LOG; MILE.

KNOTGRASS, or **KNOTWEED**, also called *doorweed*, is an annual weed that is found in northern United States and Canada. Its jointed stems lie flat against the ground and have many branches, which form a thick mat. The leaves are bluish-green and the flowers greenish-pink.

Scientific Classification. Knotgrass makes up the genus *Polygonum* of the family *Polygonaceae*. LOUIS PYENSON

KNOTS, HITCHES, AND SPLICES

KNOTS, HITCHES, AND SPLICES are methods used to tie ropes or to fasten them together. Most persons call any method of tying rope a knot. But experts generally recognize a difference between knots, hitches, and splices. A *knot* is used to tie up a bundle, to join the ends of small cords, and to make a loop, a noose, or a knob in a rope. A *hitch* is used to tie a rope to a ring, spar, post, or other object. A *splice* permanently joins the ends of two ropes, or forms a single rope into a permanent loop. A fourth type of knot, the *bend*, is used to tie the ends of two ropes together.

A rope with a knot in it is weaker than an unknotted rope. For example, a square knot weakens a rope by 50 per cent, and a bowline by 40 per cent. In general, hitches weaken a rope less than knots and bends, and splices weaken a rope even less than hitches.

Uses of Knots

In spite of the development of wire rope and mechanical fastenings, knots are still important to people in many occupations. The ability to tie knots has always been one of the chief skills required of sailors, and remains important on ships and boats. Sailors use knots to fasten ropes on objects to be lifted on or off vessels. Owners of sailboats have to master the skill of tying knots in order properly to adjust the *rigging*, or lines attached to the sails, booms, and masts (see SAILING [Rigging]).

Sportsmen use knots to set up tents, to prepare fishing tackle, to build traps, and to do hundreds of other jobs. Surgeons have to be able quickly and skillfully to tie the tiny knots in *sutures*, or threads, used to close incisions.

Knots are widely used on farms. For example, farmers have to be able to tie knots in the rope used to make halters for animals. Knots are also used to hitch horses, cows, and other animals to posts. Farmers often have to rig blocks and tackles to lift hay or other products into barns (see BLOCK AND TACKLE).

Other persons who make wide use of knots and rope include explorers, mountain climbers, builders, weavers, commercial fishermen, and housewives. The Boy Scouts require that boys learn the art of tying knots because of their importance in camping and hiking. Knots can also be a hobby. Many persons make *knot boards* that permanently display various kinds of knots.

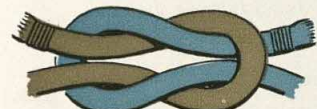
Tying Knots

The Language of Knots was developed to name the various parts of a rope and the simple shapes into which they can be formed. The *end* of a rope is the part with which knots are tied. The rest of the rope is called the *standing part*.

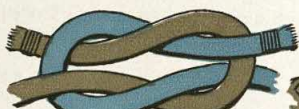
The simple shapes that can be made with rope form the basis for all knots. A person forms a *bight* by placing the end of the rope alongside the standing part to form a loop. In an *overhand loop*, he crosses the end of the rope over the standing part. An *underhand loop* is the opposite of an overhand loop. It is formed by placing the end of the rope beneath the standing part to form a loop. An *overhand knot* is a loop through which an end has been passed. An overhand knot is used to make other knots. It is never used alone.

KNOTS, HITCHES, AND SPLICES

A **KNOT** is used to tie up a bundle, to join the ends of two very small cords, and to make a loop, a noose, or a knob in a rope. A **BEND** is used to tie the ends of two ropes together. A **HITCH** is used to tie a rope to a ring, spar, post, or other object. A **SPLICE** forms a loop or joins the ends of two ropes.



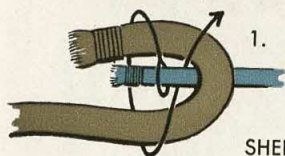
SQUARE KNOT



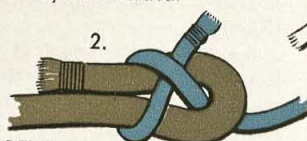
GRANNY KNOT

THE SQUARE KNOT, or **REEF KNOT**, is used in reefing (temporarily reducing the area of a sail), in tying up bundles of all kinds, and for many other purposes. It is insecure if the two cords are of different sizes or materials.

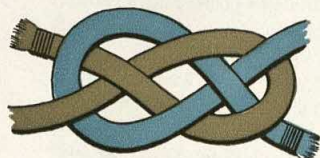
THE GRANNY KNOT, or **LUBBER'S KNOT**, is sometimes tied by mistake instead of a square knot. It is unsafe, however, and should always be avoided.



SHEET BEND

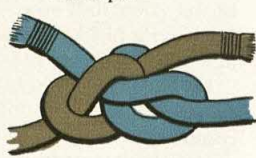


THE SHEET BEND, or **WEAVER'S KNOT**, is the best knot to use when ropes of different sizes are to be joined. It is as safe in thread and twine as it is in rope.



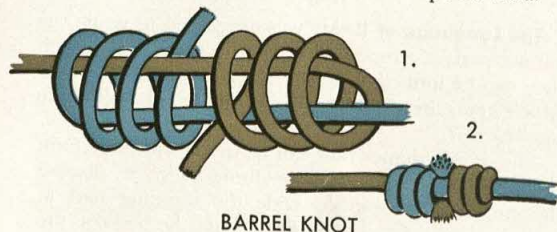
1.

CARRICK BEND



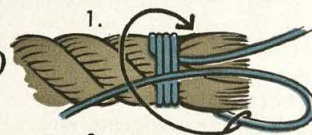
2.

THE CARRICK BEND is a good way to tie two large ropes or hawsers together. Unlike most other bends, it does not tend to jam when the knot is wet and it is pulled hard.



BARREL KNOT

THE BARREL KNOT is the best knot with which to tie two fish lines together, or two gut or nylon leaders. (A leader connects the hook or lure with the fish line.) Since the knot is shaped like a torpedo, and since the ends can be trimmed very close, the knot causes little disturbance in the water.



1.



2.

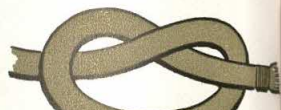


WHIPPING



1.

WALL KNOT



OVERHAND KNOT



FIGURE-EIGHT KNOT



2.



WHIPPING keeps the end of a rope from unraveling.

THE OVERHAND KNOT, or **THUMB KNOT**, is used to keep a rope end from running through a block (pulley) or other opening. It is also used in thread and string (but not in rope) to keep the end from unraveling.

THE FIGURE-EIGHT KNOT is used for the same purpose as the overhand knot. However, it forms a larger knob, and it is easier to untie than the overhand knot.

THE WALL KNOT, like the overhand and figure-eight knots, is a "stopper" knot. But it is neater and more permanent.



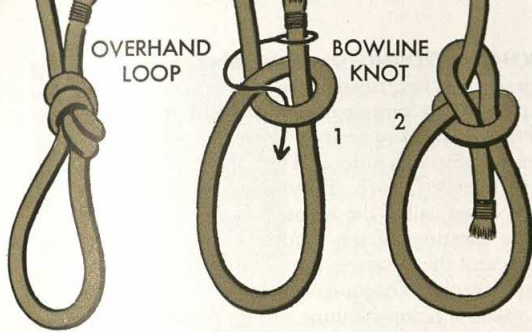
1.

ANGLER'S KNOT



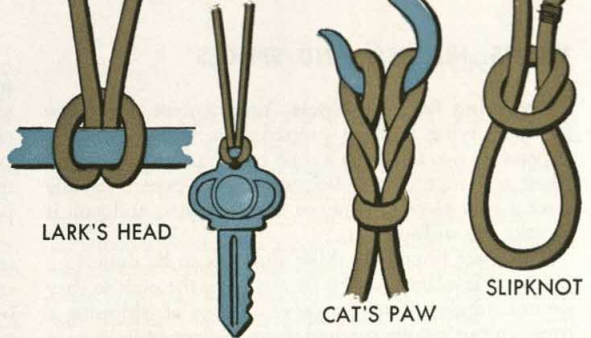
2.

THE ANGLER'S LOOP, or **BLOOD BIGHT**, is the safest, strongest, and easiest way to tie a loop in a leader. It is perfectly adapted for use in gut or nylon.



THE OVERHAND LOOP is a useful knot in thread or string, but is not a suitable knot for tying in rope.

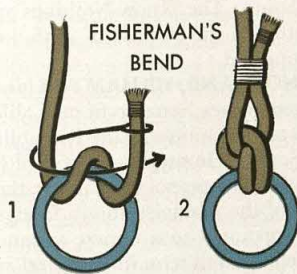
THE BOWLINE KNOT has been called the "king of knots." It forms a strong loop that never slips or jams.



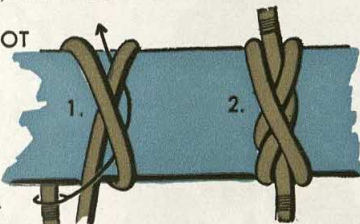
THE LARK'S-HEAD, also called the **COW HITCH**, works best when the pull comes on both ends.

THE CAT'S PAW is used to hitch a sling to a hook.

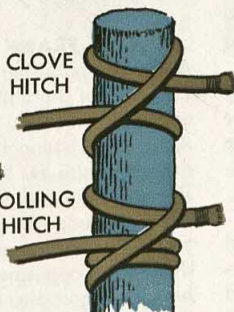
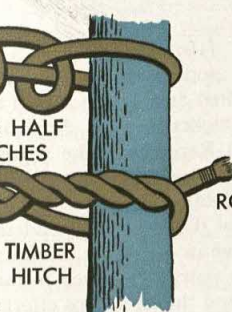
THE SLIP NOOSE is sometimes useful for temporary purposes, but is neither strong nor secure.



THE FISHERMAN'S BEND, or **ANCHOR BEND**, is a standard knot for the anchor cable of a boat. The free end of the cable should be either secured with a smaller cord, as illustrated, or tied with a bowline or a half hitch.



THE CONSTRICTOR KNOT can keep an object from expanding. It is useful as a temporary binding or whipping, as a tourniquet, and for all sorts of odd jobs around the house.

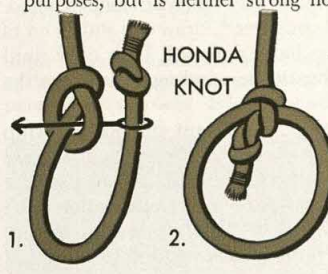


TWO HALF HITCHES may be used to fasten a line temporarily but quickly to a post, a hook, or a ring.

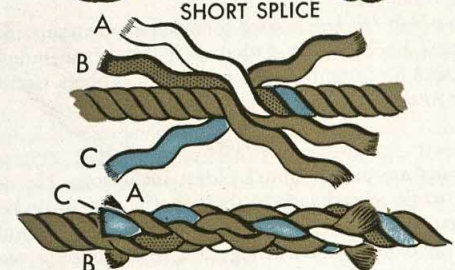
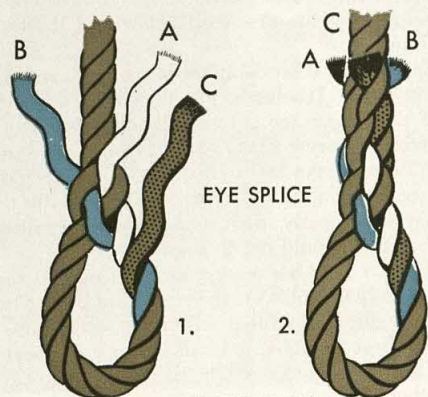
THE TIMBER HITCH, or **LOG HITCH**, is used for lifting and towing logs and other heavy objects. This is one of the strongest and safest of all hitches. It is always easy to untie, even when it has been under great strain.

THE CLOVE HITCH, or **RATLINE HITCH**, is another quick and easy way to hitch a rope to an object.

THE ROLLING HITCH is also known as the **MAGNUS HITCH**. It resembles the clove hitch, but is less likely to slip.



THE HONDA KNOT is the most nearly circular of all fixed loops. To make a lasso with this knot, pass the other end of the line through the circular loop.



THE EYE SPLICE is the most generally useful splice. Tuck strand A through first, then strand B, as shown. Turn the loop over and tuck strand C through. Then tuck each strand twice more.

THE SHORT SPLICE is used for mending a broken rope, and for splicing two ropes together. Unlay the strands of each rope end. Tuck each strand over one strand and under one strand of the other rope end, in the direction opposite that in which the strand seeks to twist. Then tuck each strand a second time. The ends of a splice should not be trimmed too closely, or they will work out.

KNOTS, HITCHES, AND SPLICES

Preparing Rope for Knots. You can use most rope for knot tying without preparing it. However, most experts do two things to a rope before putting it to use. Most new rope is stiff. Because of this, experts usually *work* a new piece of rope, or stretch, twist, and pull it to take the stiffness out.

The most important thing that has to be done to a new rope is *whipping*. This means tying the ends so they do not unravel. There are several ways of whipping a rope. In one simple method, form a piece of light yarn into a loop and place the loop along the rope near the end to be whipped. Then tightly wind the yarn around the loop and rope to bind them together. Keep winding until the length of the whipping equals the diameter of the rope, but leave a small part of the yarn loop exposed. When the winding is completed, draw the short end of the twine through the loop, and pull both ends until the loop is drawn beneath the winding. Then trim the ends of the yarn.

Sailors often use a more difficult method to whip rope. They call it the *palm and needle* method because it involves the use of a needle similar to that used for sewing, and a leather glove, or palm, used to force the needle through the rope. The illustrations that accompany this article show still another method of whipping a rope.

Useful Knots. Choosing the right knot is an important part of working with rope. Most knots have been developed to meet some particular need. Some of the most useful knots are described below and illustrated with this article.

The Square Knot is probably the best known and most widely used knot. It serves to join the ends of two ropes, and has the advantage of strength and ease of tying and untying. It never slips or jams. People use square knots to tie packages and to fasten towing lines. Most people use a variation of the square knot to tie their shoes. An improperly tied square knot is called a *granny knot* and should not be used.

The Bowline Knot has a wide range of uses. It ranks as one of the basic knots. At the end of a rope, the bowline forms a strong loop that will never slip or jam. Its uses range from fastening animals to forming a seat for a man to be suspended while painting, cleaning, or doing other jobs.

Two Half Hitches are used to fasten a rope temporarily to a post, hook, or ring. Other useful hitches include the *clove hitch* for fastening rope to smooth timbers, and the *timber hitch* for dragging logs.

History

Knots are one of man's oldest inventions. He used them to tie arrowheads to their shafts, and to tie bowsstrings to bows. Other early uses of knots included making clothes and fishing nets, and binding wood together to make a hut or other shelter. The ancient Inca Indians of Peru used knots to keep records of sums and figures.

One of the most famous knots is the Gordian knot, mentioned in Greek mythology. This knot was so intricate that legend said that the man who could untie it would rule Asia.

See also GORDIAN KNOT; ROPE.

KNOW-NOTHING was a member of certain secret societies that flourished in the United States from 1852 to 1860. They protested against immigration and the election or appointment of Catholics and the foreign-born to official positions. They also opposed the Roman Catholic Church. They soon formed the American party, often called the Know-Nothing party.

The meetings of the Know-Nothings were held secretly, and the measures they promoted were never discussed openly. When anyone who was not a party member asked a Know-Nothing any question regarding his policies, the reply was, "I don't know." Constant repetition of this phrase gave the party its popular name.

In the state elections of 1854 the Know-Nothings carried Massachusetts, polled large votes in New York and Pennsylvania, and gained a considerable following in the South. The Know-Nothings split over the slavery question in the election of 1856, and the party rapidly disappeared.

KNOWLAND, WILLIAM FIFE (1908-^{JOHN R. ALDEN}), served as a United States Senator from California from 1945 to 1958 and for a time as the Republican party's leader in the Senate. He supported most of President Dwight D. Eisenhower's proposals in domestic issues but criticized parts of the administration's foreign policy. Knowland was appointed to a Senate vacancy in 1945 and was elected to a full term in 1946 and 1952. He was born in Alameda, Calif., and was graduated from the University of California.

F. JAY TAYLOR



Republican State Central Com., Calif.

William F. Knowland



Chicago Daily News

Frank Knox

KNOX, FRANK (1874-1944), was a prominent American publisher and politician. He ran for Vice-President of the United States with Alfred M. Landon on the Republican ticket in 1936, but was defeated. Although a staunch Republican, he supported President Franklin D. Roosevelt's foreign policy. In 1940, Roosevelt appointed him Secretary of the Navy and Knox became one of the few party leaders in United States history to serve in a cabinet formed by a President of the opposing party. He served in this post until his death, and directed the enormous effort required to build the U.S. fleet to its wartime strength.

Knox was born in Boston and attended Alma (Mich.) College. He became publisher of the Sault Sainte Marie (Mich.) *News* in 1901. Knox took charge of the Boston *American* and *Advertiser* in 1927. The following year, he became general manager of all Hearst papers. He bought a controlling interest in the *Chicago Daily News* in 1931, and served as its publisher until 1940. Knox died on Apr. 28, 1944.

JOHN TEBBEL



Brown Bros.

Henry Knox

KNOX, HENRY (1750-1806), was an American Revolutionary War general and the nation's first Secretary of War. He was one of George Washington's most trusted officers.

Knox was born in Boston. He joined the Boston Grenadier Corps in 1772, and studied military science and engineering. In 1775, he became a colonel in charge of the Continental Army artillery. Knox directed Washington's troops

when they crossed the Delaware in December, 1776, to march on Trenton. Washington commended him publicly for this, and Knox was promoted to brigadier general. He fought in battles around New York City, and at Brandywine, Germantown, Monmouth, and Yorktown.

In 1779, Knox suggested establishing a military academy at West Point. He sat on the court-martial that condemned British Major John André in 1780 (see **ANDRÉ, JOHN**). Knox became a major general in 1781, and received the surrender of the British forces in New York. He took part in founding the Society of the Cincinnati, which was made up of Revolutionary officers, at the close of the war in 1783 (see **CINCINNATI, SOCIETY OF THE**).

Knox became Secretary of War in 1785, before the adoption of the Constitution. Washington reappointed him in 1789. In 1790, Knox proposed that a national militia (later the National Guard) be organized, but Congress rejected the plan.

JOHN R. ALDEN

KNOX, JOHN (1515?-1572), led the Protestant Reformation in Scotland. His stern convictions of righteousness and duty made a lasting impression on his people.

The religion Knox preached was based on that of the Swiss reformer, John Calvin. Knox's *History of the Reformation in Scotland* is a vivid story.

Knox was born near Haddington. It was once thought that he attended the University of Glasgow, but it is more probable that he studied at the University of Saint Andrews. At some time he was ordained a Roman Catholic priest, but before 1545 he became a Protestant. He was a friend and close companion of the Scottish religious reformer George Wishart.

In 1546 Wishart was tried for *heresy*, or disbelief in Roman Catholic doctrines. He was burned at the stake by order of Cardinal Beaton, Archbishop of Saint Andrews. In revenge, friends of Wishart murdered the cardinal. Knox began his career as a reformer by preaching to the Protestants who were hiding in the castle of Saint Andrews after the cardinal's murder. But Knox's career was soon stopped by the surrender of the city to the French in 1547.

Knox served as a galley slave for the French for 19 months. In 1549 he was freed and went to England, where he became one of the chaplains to King Edward VI. Knox took a leading part in the English Reformation until Edward died, and the accession of Queen Mary, a Catholic, drove him to the European continent in 1554. Later Knox served for a time as pastor of the English church at Geneva, Switzerland.

KNOX, RONALD A.

In 1559 Knox returned to Scotland after Queen Mary's death, and began a career of triumph. He preached a stirring sermon against the "idolatry" of the Catholic ritual of the Mass. His sermon aroused the people so much that they attacked Catholic churches and monasteries. The religious revolution soon spread throughout Scotland, and in 1560 the Scottish Parliament adopted Protestantism as the state religion. Knox was chairman of a committee of Parliament which at this time prepared the *First Scottish Confession of Faith* and the *First Book of Discipline*. These were intended to be used as standards of faith and government for the Scottish Church.

Knox's last major struggle began with the return of Mary, Queen of Scots, in 1561. Mary was an ardent

John Knox Scolded Mary, Queen of Scots, often driving her to tears. He denounced the Roman Catholic Church and compared himself with Saint Paul, and her with the Roman tyrant, Nero.

Culver



Catholic and she and Knox became bitter enemies. When Mary became involved in a private scandal, the Scottish people revolted and forced her to abdicate the throne in 1567 in favor of her infant son, James VI. This assured Knox's success.

LEFFERTS A. LOETSCHER

KNOX, PHILANDER CHASE (1853-1921), a Republican political leader and statesman, served as Secretary of State from 1909 to 1913 under President William Howard Taft. His efforts to encourage and protect American investments abroad were sometimes criticized as "dollar diplomacy" (see **DOLLAR DIPLOMACY**).

Knox was born in Brownsville, Pa. He served as Attorney General from 1901 to 1904 under Presidents William McKinley and Theodore Roosevelt. Knox represented Pennsylvania in the U.S. Senate from 1904 to 1909, and from 1917 to 1921.

NELSON M. BLAKE

KNOX, RONALD ARBUTHNOTT. See **BIBLE** (Catholic Translations).

KNOX COLLEGE

KNOX COLLEGE is a private, coeducational liberal arts college at Galesburg, Ill. Courses lead to bachelor's degrees. Knox is noted for personal instruction. Seniors take an interdepartmental course in American Civilization. Knox has cooperative programs in engineering with Columbia and Stanford universities. The Henry M. Seymour Library contains many special collections. The college was founded in 1837. An abolitionist center during the Civil War, it served as the site of the fifth Lincoln-Douglas debate. Abraham Lincoln received his first honorary degree from the college. For enrollment, see **UNIVERSITIES AND COLLEGES** (table). **PHILIP S. HARING**

KNOXVILLE, Tenn. (pop. 111,827; alt. 890 ft.), lies on the Tennessee River in the heart of a rapidly developing industrial area in the Great Valley of East Tennessee. Four of the largest dams of the Tennessee Valley Authority stand within 30 miles of the city. Knoxville serves as the gateway to the Great Smoky Mountains National Park from the west and the north. For location, see **TENNESSEE** (color map).

The main campus of the University of Tennessee is in Knoxville. The University and the Tennessee Valley Authority have developed a program for the conservation of natural resources. Knoxville College, a veterans' training center, and a school for the deaf are also located in the city. Knoxville has more than 40 elementary and secondary schools.

The city has about 360 manufacturing plants. Products include chemicals, clothing, foods, foundry products, furniture, glass, plastics, and textiles. Knoxville has one of the largest marble works in the world. The soft-coal fields of Tennessee, Kentucky, and Virginia are nearby.

Around 1786, pioneer James White arrived and built a blockhouse for defense against the Cherokee Indians. He planned a city to be named in honor of General Henry Knox, the first secretary of war. Knoxville be-

longed to North Carolina until 1790, when the state ceded its western lands to the federal government. In the same year, William Blount, the first governor of the territory south of the Ohio River, chose Knoxville as his headquarters. The Blount Mansion, the first frame house west of the Alleghenies, still stands in Knoxville.

The city served as the capital of Tennessee from 1796 to 1807, and from 1808 to 1811, and again from 1816 to 1819. During the Civil War, Union troops led by Major General A. E. Burnside defeated Confederate forces under General James A. Longstreet at Knoxville. After the Civil War, the city grew rapidly. In the 1930's, the development of the Tennessee Valley Authority increased Knoxville's importance as a manufacturing center (see **TENNESSEE VALLEY AUTHORITY**).

Knoxville is the seat of Knox County. It has a mayor-council type of government.

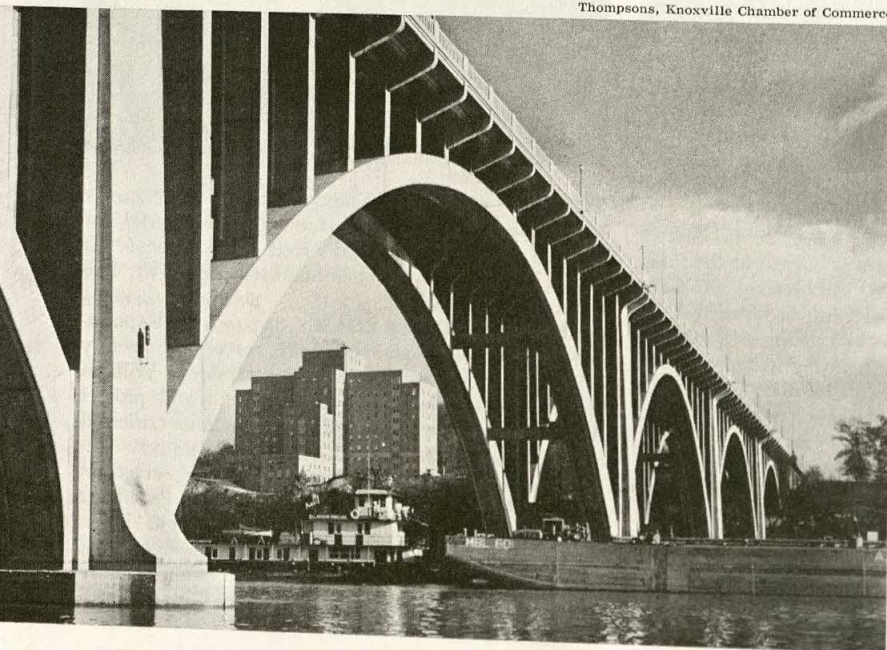
JEWELL A. PHELPS

KNOXVILLE COLLEGE is a coeducational liberal arts school at Knoxville, Tenn. It is sponsored by the United Presbyterian Church in the United States. Graduates receive A.B., B.S., B.S. Ed., and B.S. Mus. Ed. degrees. Knoxville College was founded in 1874. For enrollment, see **UNIVERSITIES AND COLLEGES** (table).

KNUDSEN, WILLIAM S. (1879-1948), an American industrialist, directed American war production during World War II. His main contributions to American industry were his ideas on mass production, such as the use of the conveyor belt in automobile manufacturing. Knudsen was born in Copenhagen, Denmark, and came to the United States at the age of 20. He designed and built assembly plants for the Ford Motor Company in various parts of the country. He became president of General Motors Corporation in 1937. President Franklin D. Roosevelt appointed him in 1940 to the National Defense Advisory Commission as coordinator of military supplies. The following year, Knudsen became director of the Office of Production Management, and in 1942 was made production director of the Department of War.

V. E. CANGELOSI and R. E. WESTMEYER

Thompsons, Knoxville Chamber of Commerce



Knoxville, Tenn., the gateway to the Great Smoky Mountains National Park, lies in the Tennessee River Valley. Henley Bridge crosses Fort Loudoun Lake near downtown Knoxville. The Henley Bridge frames the East Tennessee Baptist Hospital.

KOALA, *koh AH luh*, is a small Australian animal that is also called a *teddy bear*. In its lazy habits it resembles a sloth. It is sometimes called the *Australian bear*, *pouched bear*, or *native sloth*, but it is not a bear or sloth. It is a *marsupial*, or mammal that has a pouch for carrying its young.

The koala is about 24 inches long and 12 inches high at the shoulder, and has only a suggestion of a tail. Its thick, soft, woolly fur is ash-gray above and yellowish-white below. It has a thick head, a short snout, and its mouth has cheek pouches.

The koala often hangs in trees with its back downward, like a sloth. It can grasp the branches easily with its long toes. It sleeps during the day in the top of a blue-gum (eucalyptus) tree. Its food is almost entirely eucalyptus leaves, but it also roams around on the ground and digs up roots. This animal never drinks. The mother koala carries her young cub in her pouch. After it grows old enough, it rides on her back.

Some persons eat koala flesh. Until recently, hunters killed great numbers of the animals for their warm, soft fur. Over 2,000,000 koala pelts were exported in 1927. Now the koala is protected by law.

Scientific Classification. The koala belongs to the family *Phascolarctidae*. It is classified as genus *Phascolarctos*, species *cineurus*.

ROBERT T. HATT

See also ANIMAL (color picture, Australia, New Guinea, and Tasmania); MARSUPIAL.

KOBE, *KOH bee* (pop. 979,305), is one of the two chief ports of Japan. It stands on the south coast of Honshu Island. Kobe, near the eastern end of the Inland Sea, serves as the seaport for the city of Osaka. For location, see JAPAN (color map).

Kobe was built on a narrow, fan-shaped plain that stretches between the sea and a row of high mountains to the north. The mountains protect the city from severe winters. Kobe has long rows of docks, and is an important center of heavy industry and shipbuilding. It also produces aircraft and textiles.

In 1956, construction of new buildings and repair of harbor facilities made Kobe the leading export and import center of Japan. Many people worship at the ancient Buddhist temple of Nofukuji, which houses a wooden statue carved about 794. Kobe was founded in the 1100's. Commerce became important to the city after Japan began trading with other countries in the mid-1800's.

HUGH BORTON

KOBLENZ, *KOH blents*, or **COBLENZ** (pop. 87,000), is a manufacturing and trading center in the West German Rhineland. The Rhine and Moselle rivers meet at Koblenz. For location, see GERMANY (color map). Moselle wine is one of the city's chief products. Other products include ships, pianos, and machinery.

KOBOLD. See BROWNIE.

KOCH, *kohk*, **ROBERT** (1843-1910), a German physician, established bacteriology as a separate science. He developed new techniques of staining, incubating, and growing bacteria, which remain the basis of the bacteriological study of infections. In 1867, he grew a pure strain of the anthrax bacillus and worked out a method of inoculation to prevent this disease in cattle (see ANTHRAX). In 1878, he published his great thesis on the cause of infections due to injury. Four years later, he discovered the germ that causes tuberculosis, sometimes called *Koch's bacillus* (see TUBERCULOSIS).



Philip Gendreau

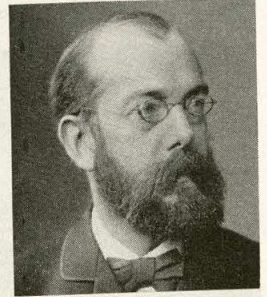
A Koala Mother carries her young cub in her pouch until the cub is about six months old. After that, it rides on her back.

Koch won the 1905 Nobel prize in physiology and medicine for his work on tuberculosis. He also introduced the technique of steam sterilization by dry heat, and identified the germ of Asiatic cholera.

Koch was born at Klausthal, Hanover, and studied medicine at Göttingen. In 1885, he was appointed a professor at the University of Berlin. Five years later, he announced his preparation of an extract from tubercle bacilli, called *tuberculin*, to be used in diagnosing cases of tuberculosis. Koch also studied blood infections among peoples in East Africa, and the sleeping sickness of West Africa. In India, he conducted research on bubonic plague. In 1891, he founded the Institute for Infectious Diseases in Berlin, and became its director.

Robert Koch

Brown Bros.



HENRY J. L. MARRIOTT

KOCHER, *KOHK ur*, **EMIL THEODOR** (1841-1917), a Swiss surgeon, is best remembered for his pioneer work on the thyroid gland. In 1878 he performed, for the first time, an operation for the removal of a *toxic goiter*, or enlarged thyroid gland. He received the 1909 Nobel prize in physiology and medicine for his work on the physiology, pathology, and surgery of the thyroid. He also devised many surgical instruments and a method of reducing shoulder dislocations. He carried out important studies on coagulation of the blood and on the function of the brain and spinal cord.

Kocher was born at Bern, and studied in London, Paris, Berlin, and Vienna. He served as a professor of surgery at the University of Bern from the age of 31 until his death.

HENRY J. L. MARRIOTT

KODAK. See EASTMAN, GEORGE.

KODAK PARK. See NEW YORK (Interesting Places to Visit).

KODÁLY, ZOLTÁN

KODÁLY, *ko DAH' y*, **ZOLTÁN** (1882-), a Hungarian composer and teacher, became famous for his choral work, *Psalmus Hungaricus* (1923), and the folk opera *Háry János* (1926). He made a popular suite from this opera. He gained international recognition as a creator of rhapsodies using folk material. His works include *Budavári Te Deum* for soloists, chorus, and full orchestra; *Serenade*; *Concerto for Orchestra*; and two string quartets. Kodály was born at Kecskemét, and was educated in Budapest.

JOYCE MICHELL

KODIAK, *KOH dih ak*, Alaska (pop. 2,628; alt. 50 ft.), is the largest town on Kodiak Island. It lies about 1,400 miles northwest of Seattle, Wash. For location, see ALASKA (color map). It was established by Gregor Shelikof about 1792, and is one of the oldest settlements in the state. Kodiak served as headquarters for Russian colonists and fur traders in Alaska. Alaska's first school was started by the Russians at Three Saints Bay near Kodiak in 1785.

The town's main industry is fishing for salmon and halibut. Crab fishing is also important. Kodiak Island has several canneries. Farmers raise a few cattle, and grow excellent vegetables.

The United States maintains a large navy base near the town. Big-game hunters come to Kodiak Island to kill the huge brown Kodiak bears (see BEAR). The island covers about 5,000 square miles.

LYMAN E. ALLEN

A Russian Orthodox Church Stands In Kodiak, Alaska.
Many of the residents of Kodiak are of Russian ancestry.

G. C. Ameigh



KOESTLER, *KEST ler*, **ARTHUR** (1905-), is a novelist and essayist. He described his conversion to communism in 1931 and his break with the movement seven years later in *Arrow in the Blue* (1952) and *The Invisible Writing* (1954). He attacked communism in his novel, *Darkness at Noon* (1941). His other novels, all of

which dramatize political themes, include *Arrival and Departure* (1943) and *Age of Longing* (1951). Koestler started out as a journalist. Born in Budapest, Hungary, he later became a British citizen.

HARRY T. MOORE

KOFFKA, *KAWF kuh*, **KURT** (1886-1941), was an early exponent of Gestalt psychology (see PSYCHOLOGY [Gestaltism and Behaviorism]). He opposed studying behavior by reducing it to independent parts, which, when recombined, were supposed to equal the whole. He did original studies in the perception of movement, in problems of seeing, and in the ways in which behavior patterns develop in early years. Koffka was born in Berlin, and taught at Smith College from 1927 to 1941.

KENNETH E. CLARK

KOH-I-NOOR. See DIAMOND (Famous Diamonds).

KÖHLER, *KUHL ur*, **WOLFGANG** (1887-), a German psychologist, contributed to the development of Gestalt psychology. This movement in psychology opposes analysis of behavior into its elements, and argues that behavior is best understood when studied as a whole. Köhler collected evidence to show that seeing and understanding occur immediately, and do not involve learning. His pioneering studies of behavior in apes showed that insight does occur in animals.

Köhler was born in Reval, Estonia. KENNETH E. CLARK

KOHLER VILLAGE. See WISCONSIN (Interesting Places to Visit).

KOHLRABI, *KOHL RAH bih*, is a vegetable closely related to cabbage. The part that is eaten is the stem. Leaf stalks grow from this stem. Like other members of the cabbage group, kohlrabi has a mustard taste when overmature.

Kohlrabi is native to Europe. It is a biennial plant, and can be produced in two or three months. Although kohlrabi can be grown in the fall, the seeds are usually sown in early spring, about the time of the last frost. The plants are later thinned so they are 2 inches apart. They should be harvested while the bulbs are still tender. Farmers often grow kohlrabi as a substitute for turnips.

Scientific Classification. Kohlrabi is in the mustard family, or *Cruciferae*. It is genus *Brassica*, species *oleracea*, variety *caילו-rāpa*.

JOHN H. MACGILLIVRAY

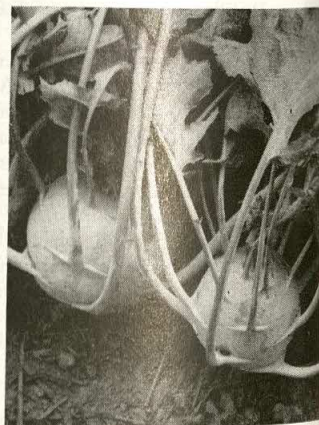
See also PLANT (color picture, Vegetables Unknown to Our Forefathers); VEGETABLE (Planting Table).

KOINE. See GREEK LANGUAGE (History).

KOKEE. See HAWAII (Interesting Places to Visit).

KOKO NOR, *KOH koh NAWR*, the largest lake in Tibet, covers 2,200 square miles in northeastern Tibet. It lies at an altitude of about 10,000 feet, in a land basin surrounded by the eastern ends of the Nan Shan Mountains. For location, see CHINA (color map). The Chinese call this beautiful lake *Chinghai*, which means *green lake*. Its water, normally salty and shallow, freezes between November and March.

J. E. SPENCER



USDA

The Kohlrabi Plant produces an edible, bulb-shaped stem.

KOKOMO, *KOH koh moh*, Ind. (pop. 47,197; alt. 815 ft.), is the industrial and trading center of an agricultural area in central Indiana. It lies about 50 miles north of Indianapolis (see INDIANA [map]). Products include automobile and tractor parts; brass, glass, iron, steel, and wire products; ceramics; clothing; cutlery; plumbing equipment; radios; and tools.

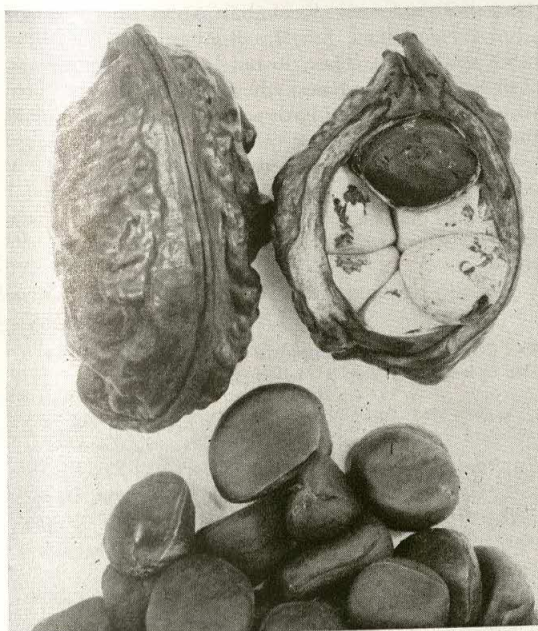
Kokomo, named for a Miami Indian chief, was founded in 1843 on the site of an Indian trading post. Elwood Haynes invented one of the first practical automobiles there in 1894. Kokomo has a mayor-council form of government.

PAUL E. MILLION, JR.

KOKOPO. See NEW BRITAIN.

KOKOSCHKA, *koh KAWSH kuh*, **OSKAR** (1886-), is an internationally known Austrian painter. His turbulent portraits capture the personal character, humanity, and spiritual vitality of their subjects. Even his landscapes and theme pictures are full of suppressed feeling, agitation, and, at times, pathos. He applies paint rather heavily and seems to work under high emotional tension. His painting, *View of the Thames*, appears in color in the PAINTING article. Kokoschka was born in Pöchlarn, Austria.

LESTER D. LONGMAN



Ewing Galloway

Kola Nuts are used to make many of the kola-flavored drinks sold in the United States. These nuts were grown in Brazil.

KOLA NUT is the seed of a tree that grows wild in West Africa. Kola trees are cultivated in the West Indies and in tropical parts of South America. Each pod contains several large white or red nuts. Kola nuts are fleshy seeds shaped like horse chestnuts. The people of Africa, who chew these nuts, also call them *cola*, *guru*, and *bissey* nuts. The nuts contain twice as much caffeine as coffee beans do. Kola nuts are used in making soft drinks as well as in medicine.

Scientific Classification. The kola tree belongs to the family *Sterculiaceae*. It is classified as genus *Cola*, species *acuminata*.

C. A. REED

KOMONDOR

KOLBE, *KAWL buh*, **GEORG** (1877-1947), a German sculptor, established his reputation with figures that suggest a delightful balance between active movement and inward repose. He used this theme in his first important work, *Tänzerin* (Dancer) (1912). In the early 1920's, he simplified his style, as in *Assunta* (1921). But he soon changed this partly abstract style in a search for greater vitality and power, which he portrayed in *Beethoven Monument* (1927).

Kolbe was born in Waldheim, Germany. He began his career as a painter and lithographer. During World War II, the Nazis black-listed him. But, after the war, many critics praised him for the freshness and optimistic spirit of his works, chiefly those that were produced before 1925.

CHARLES SEYMOUR, JR.

KOLINSKY. See FUR (Names of Furs).

KOLKHOZ. See RUSSIA (Agriculture).

KOLLWITZ, *KOHL vits*, **KÄTHE** (1867-1945), was a German painter, sculptor, and print maker. She became famous for violent images of common people and scenes of social protest. Among her best-known works are the woodcut, *Hunger*, and the lithograph, *Weavers*. She was born in Königsberg and studied in Munich. In 1919, she became the first woman elected to the Berlin Academy.

S. W. HAYTER

KÖLN. See COLOGNE.

KOLTANOWSKI, GEORGE. See CHESS (History).

KOMODO DRAGON. See DRAGON OF KOMODO.

KOMONDOR, *KOH mahn dawr*, is a shepherd dog of Hungary. Komondors, or *komodorok*, have looked much alike and shared the same general characteristics for at least 1,000 years. They are all white, and their long hair is usually heavily matted.

Large dogs, the komondors stand about 30 inches high and weigh around 90 pounds. No one knows where the first komondor came from, but the Magyars brought their komondors with them when they invaded Hungary in the early 900's.

HENRY P. DAVIS

The Komondor is an excellent dog for sheepherding and for police work. All komondors have heavy, woolly coats.

Dixie Evans, Columbus, Ohio



KON-TIKI. See RAFT.

KONA WINDS. See HAWAII (Climate).

KONAKRI. See CONAKRY.

KONEV, KOH nev, IVAN STEPANOVICH (1897-), rose to fame as a Russian marshal in World War II. He drove the Nazis back through southern Poland to Berlin in 1945, and also captured Prague. His troops

were the first Russians to meet American forces in Germany, on the banks of the Elbe River.

In 1946, Konev was made a deputy war minister and commander in chief of all land forces. He and Nikita Khrushchev were friends when they served in the Ukraine. In 1955, Khrushchev made Konev supreme commander of all the Russian and "satellite" armies of eastern Europe.

In October, 1957, Konev helped Khrushchev strip power from Georgi K. Zhukov, another famous Russian World War II marshal.

Konev was born of poor farmers at Lodeino, in northern Russia. He served as a private in World War I. In 1918, he joined the Communist party and the Red Army, and fought in Russia's civil war. ALBERT PARRY

KONGO, or CONGO. See BELGIAN CONGO; CONGO RIVER.

KÖNIG, FRIEDRICH. See PRINTING (Improved Printing Presses).

KÖNIGSBERG. See KALININGRAD.

KONOYE, koh noh yeh, PRINCE (1891-1945), FUMIMARO KONOYE, was a prominent Japanese statesman in the years immediately before World War II. Although he was a leading moderate, Konoye's willingness to compromise with the militarist extremists helped them accomplish their war aims. Shortly after he first became premier in 1937, Japan attacked China. Konoye sought a compromise with the United States in 1940. However, he gave



Consulate General of Japan

Prince Konoye

way in 1941 to General Hideki Tojo's cabinet, which led Japan into World War II.

Konoye was born in Tokyo, a member of one of Japan's most aristocratic families. He became president of the House of Peers in 1933. He helped bring about the Japanese surrender in 1945, but was named a war-criminal suspect and took poison. MARIUS B. JANSEN

KONYA, kawN YAH (pop. 93,125), lies 150 miles south of Ankara in south-central Turkey. It is an important railroad center, and a stop on the old Baghdad-to-Berlin Railway. For location, see TURKEY (color map). Konya is the capital of the *vilayet*, or province, of

the same name. The city is famous for the fine horses and camels raised in the district. It has many gardens and fruit orchards, kept green by irrigation, and fine mosques, including a magnificent one built by the Seljuk Turks.

Under the Persian Empire, Konya was known as Iconium. Saint Paul preached in the city, and at one time many Jews lived there.

SYDNEY N. FISHER

KOO, goo, VI KYUIN WELLINGTON (1888-), is a Chinese statesman and leader of Nationalist China's diplomatic corps. He served as ambassador to France from 1936 to 1941, to Great Britain from 1941 to 1946, and to the United States from 1946 to 1956. He led Chinese delegations to the League of Nations and later to the United Nations. In 1957, he was elected a judge on the UN International Court of Justice. Koo was born in Shanghai and received a Ph.D. degree from Columbia University.

GEORGE E. TAYLOR

KOOKABURRA, KOOK uh BUHR uh, is a woodland kingfisher that lives in Australia and New Guinea. People of these areas call it the "laughing jackass" because its usual note is a loud braying or barking sound. Kookaburras are about 17 inches long. They have large heads, long bills, and brown, black, or white plumage. They live in forests. Kookaburras eat insects, frogs, worms, caterpillars, fish, small mammals, and even other small birds. They do not build nests but make their homes in tree holes, where they lay two or three white eggs. The male birds sometimes fiercely defend their nests from invaders.

The kookaburra is sometimes kept in captivity in zoos. Its feathers are used to make fishing flies.

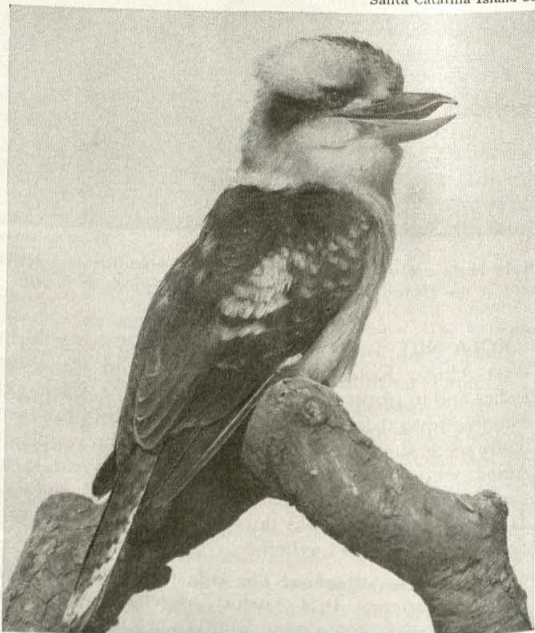
Scientific Classification. The kookaburra belongs to the family *Alcedinidae*. It is classified as genus *Dacelo*, species *gigas*.

HERBERT FRIEDMANN

See also KINGFISHER.

The Kookaburra, or Laughing Jackass, of Australia, is a kind of large kingfisher. It is noted for its peculiar cry.

Santa Catalina Island Co.



KOOTENAY, or KUTENAI, INDIANS. See KUTENAI INDIANS.

KOOTENAY NATIONAL PARK. See CANADA (National Parks).

KOOTENAY RIVER AND DISTRICT includes a river of British Columbia and Montana, and the region it drains.

The **Kootenay River** is a branch of the Columbia River. The Kootenay rises on the western slopes of the Rocky Mountains in southeastern British Columbia. The river flows south for about 200 miles and then turns north to meet the Columbia. During its course of about 400 miles, the river forms a letter *U*. The base of the *U*, which is about 125 miles long, lies in the state of Montana. In Montana, the name of the river is spelled *Kootenai*.

The part of the river that flows back into British Columbia is known as the south arm of Kootenay Lake. Farther along, the river meets the north arm. The Kootenay then turns west to empty into the Columbia River about 25 miles north of the International Boundary. It is almost impossible for boats to use the river because of its rapids.

The **Kootenay District** forms a triangle in the southeast corner of British Columbia, south and east of the Big Bend of the Columbia River. The district includes about 7,500 square miles of the Columbia basin, and about 15,000 square miles, or nearly all, of the Kootenay River basin. This region contains minerals, fertile valleys, great forests, and many lakes and streams.

A long valley extends from the Big Bend of the Columbia River southward into the United States. Another valley, west of the Purcell Mountain range, contains the Kootenay Lakes. The valley of the Arrow Lakes lies still farther to the west, beyond the beautiful Selkirk Mountains.

Mining is the chief industry of the Kootenay District. The mountains contain gold, silver, lead, zinc, and copper. Coal is found in the valleys and mountain passes. Lumbering is the second most important industry. There are fruit orchards and dairy farms in the valleys. The lakes and streams provide water irrigation and also furnish cheap transportation. Several railways serve the district. The chief cities are Fernie, Nelson, Revelstoke, Rossland, and Trail. The scenery attracts many tourists every year, and the wild game brings hunters to this region.

RODERICK HAIG-BROWN

KOPECK, KOH *peck*, is a Russian coin of aluminum and bronze. It was originally made of silver. The kopeck is equal to $\frac{1}{100}$ of a ruble. See also RUBLE.

KORAN, koh *RAHN*, is the sacred book of the Moslems. They believe that the Angel Gabriel revealed the Koran to Mohammed, a little at a time, from about 610 to 632. The name *Koran* means *the reading*, or *that which is to be read*. Mohammed gave the name Koran to these messages when he had received only a part of them. He was still living at Mecca at the time. He taught these messages to his followers, and called his teachings *Islam*. After he died, his followers collected his revelations and made them into what is now called the Koran. Between 650 and 655 the accepted text was chosen and established for the future.

The Koran is about the size of the New Testament. It consists of verses grouped into 114 chapters, or *suras*. The *suras* vary in length from only a few lines to many

KORAN

verses. The Koran is written in simple but noble language. It has long served as the model classic in Arabic literature.

Teachings. The Koran stresses above all that there is only One God, whom the Moslems call *Allah*. The One God is the Lord and Light of heaven and earth. He is the all-powerful creator of the universe, and is also merciful and understanding. The Koran tells of the holy missions of Christ and the prophets. It looks upon prayer as the ladder to heaven, and requires prayer five times a day. It stresses charity and brotherly love among Moslems. It teaches that one should be humble in spirit, temperate, brave, and just. It encourages heroic daring and sacrifice, and permits war. The Koran says that the "sun moves in a fixed place," and that sun, moon, and stars "each in its own sphere doth journey on."

The Influence of the Koran. The Koran directs the lives of Moslems throughout the world. It has served as the principal textbook in Moslem schools for over a thousand years. Some Moslems know it by heart. Many others read it again and again. Its laws concerning hygiene have protected the health of the Moslems. Its teachings and authority form the basis of the great Islamic civilization. Some Moslem leaders consider parts of the Koran out of date. But most Moslems believe its message is universal and for all time.

At first, the Moslems would not allow the Koran to be translated from the Arabic. Later, translations were made into Persian, Turkish, Urdu, and other languages. Europeans have translated the Koran into the leading Western languages, including English and French.

NABIA ABBOTT

See also ISLAM (The Teachings of Islam); MOHAMMED.

Learning the Koran, Moslem boys memorize passages from the sacred writings of Mohammed, which they have copied on wooden slates. Many Moslems can recite the entire Koran by heart.

Ewing Galloway



KOREA

한 국



Photo-Representatives

In the Land of Morning Calm, an elderly Korean wears a traditional white robe and a black horse-hair hat that shows that he is a retired farmer.

KOREA, *koh REE ah*, is a peninsula that juts into the Sea of Japan. Since the Korean War ended in 1953, the peninsula has been divided into two countries. In the south, the **REPUBLIC OF KOREA**, or **SOUTH KOREA**, is an independent country supported by the United States. In the north is the **KOREAN PEOPLE'S REPUBLIC**, or **NORTH KOREA**. It is a Communist dictatorship, and follows the orders of Russia and Communist China. The capital of South Korea is Seoul. The capital of North Korea is Pyongyang. The peninsula was the scene of a war between Communist and United Nations troops in the 1950's (see **KOREAN WAR**).

The Korean peninsula has many mountains and small valleys. It covers an area only a little larger than the state of Utah but it has about thirty-five times as many people. Political troubles and war have kept the

Koreans from developing many of the country's natural resources.

The Koreans have a long and proud history. As early as the 1100's B.C., they called their country *Chosen*, which means *Morning Calm*. The country's location between China and Japan has had important effects on its history. The Chinese often exerted great influence over Korea, and first came in contact with the Japanese there. Japan first took on the Buddhist culture of China in Korea, and learned about silk culture from the Koreans. China and Japan have fought many bitter wars to gain control of this peninsula.

The Koreans invented the first movable printing type made of metal, in the late 1300's. They also invented a phonetic alphabet in 1438. This simplified their written language. They built the first armored

KOREA (Map Index)

NORTH KOREA

Population . . . 9,850,000

SOUTH KOREA

Population . . . 21,526,374

† Cities

†Anak	C 2
Andong	D 4
†Anju, 21,861	C 2
Ansŏng, 19,356	D 3
†Aojidong, 39,616	A 5
†Chaeryŏng	C 2
Changhang	D 3
Changhowŏn	D 3
Changhŭng	E 3
†Changjin	B 3
†Changsŏng (Shŏfŏ), 17,661	B 2
Changsŏng	E 3
Changsungpo	E 4
†Changyŏn, 18,072	C 2
†Chasŏng	B 3
Chechŏn, 28,391	D 4
Cheju, 60,180	F 3
Chindo	E 3
Chinhae, 67,604	E 4
Chinju, 78,295	E 4
†Chinnampo, see Nampo	
Chinyŏng	E 4
Chochiwŏn, 18,276	D 3
†Chŏlsan	C 2
Chŏnan, 26,589	D 3
†Chŏngjin (Seishin), 184,301	B 4
Chŏngju (Seishŭ)	D 3
†Chŏngju	C 2
†Chŏngsŏng, 6,834	A 4
Chŏngŭp	D 3
Chŏngyang	D 3
Chŏnju, 124,352	E 3
Chŏrwŏn, 30,085	C 3
†Chosan, 18,239	B 2
Chumunjin	D 4
Chunchŏn, 67,888	D 3
Chungju, 41,289	D 3

Fusan, see Pusan	
Gensan, see Wŏnsan	
†Haeju (Kaishu), 82,135	C 2
Haenam	E 3
Hadong	E 3
†Hamhŭng (Kankŏ), 112,184	C 3
†Hamjong	C 2
Hamyang	E 3
†Hapsu	B 4
Heijŏ, see Pyŏngyang	
†Hoeryŏng, 24,330	A 4
Hongsŏng	D 3
†Hongwŏn, 25,663	B 3
†Hŭichŏn, 14,619	B 3
Hŭnghae	D 4
†Hungnam, 143,600	C 3
†Hwangju, 16,993	C 2
†Hyesanjin	B 4
Hŭypchŏn	E 4
Ichŏn	D 3
Inchŏn, 321,072	D 3
Iri, 62,226	E 3
†Iwŏn	B 4
Kaeryŏng	D 4
†Kaesŏng (Kaijŏ), 175,000	D 3
Kaijŏ, see Kaesŏng	
†Kangdong	C 3
†Kanggye, 30,013	B 3
Kanggyŏng	D 3
Kanghwa	D 3
Kangjin	E 3
Kangnŭng, 50,991	D 4
†Kangsŏ	C 2
Kankŏ, see Hamhŭng	
Kansŏng	C 4
†Kapsan	B 4
Keijo, see Seoul	
Keishŭ, see Kyŏngju	
†Kilchu, 30,026	B 4
†Kim Chaek (Sŏngjin), 57,778	B 4
Kochang	E 3
†Koksan	C 3
Konju, 21,952	D 3
Konyang	E 3
Kosŏng, 14,842	C 4
†Kowŏn	C 3
†Kŭmchŏn	C 3

Kŭmchŏn	D 4
Kŭmhae	E 4
Kŭmhwa	C 3
Kŭmje	E 3
Kŭmsan	D 3
†Kŭmsŏng	C 3
Kunsan, 86,446	E 3
Kwangju, 233,358	E 3
Kyŏngju (Keishŭ), 65,402	E 4
†Kyŏngsŏng, 25,925	B 4
†Maegsan	C 3
†Manpojin	B 3
Masan, 129,986	E 4
Miryang	E 4
Mokpo, 113,636	E 3
†Munchŏn	C 3
Munsan	D 3
†Musan, 20,717	A 4
†Myŏngchŏn	B 4
Naesŏng	D 4
†Najin (Rashin), 34,338	A 5
Naju, 20,199	E 3
Namhae	E 3
†Nampo (Chinnampo), 82,162	C 2
Namwŏn, 24,736	E 3
Nonsan	D 3
†Ongjin	D 2
†Osong, 10,116	A 4
Onyang	D 3
†Pakchŏn	C 2
Pangjin	E 4
†Panmunjom	D 3
Pohang, 52,473	D 4
Pogyo	E 3
Posŏng	E 3
Puan	E 3
†Pukchŏng, 30,709	B 4
†Pungsan, 17,453	B 4
Pungsan	D 4
†Puryŏng	A 4
Pusan (Fusan), 1,049,363	E 4
Puyŏ	D 3
†Pyoktong	B 2
Pyŏngchang	D 4
†Pyŏnggang, 20,524	C 3
Pyongtaek, 16,983	D 3
†Pyŏngyang (Heijŏ), 450,000	C 2
Rashin, see Najin	

Sachŏn	E 4
†Saengchŏn	C 3
†Sakchu, 13,568	B 2
Samchok	D 4
Samchŏnpo	E 4
Samnangjin	E 4
Sangu, 43,760	D 4
†Sariwŏn, 42,957	C 2
†Sasuri	B 3
Seishin, see Chŏngjin	
Seishu, see Chŏngju	
Seoul (Keijo), 1,574,868	D 3
Shŏfŏ, see Changsŏng	
†Sinanju, 16,493	C 2
†Sinchŏn	C 2
†Sinyŏ	C 3
†Sinhŭng, 7,583	B 3
†Sinpo	B 4
Sintaejin	E 3
†Sindŭju, 118,414	B 2
†Sŏnchŏn, 22,725	C 2
†Sŏngchŏn, 9,148	C 3
†Sŏngjin, see Kim Chaek	
Songjŏng	E 3
Sŏngju	E 4
Sosa	D 3
Sŏsan, 21,202	D 3
†Sunchŏn, 20,682	C 2
Sunchŏn, 61,647	E 3
Suwŏn	D 3
Taegu (Taikyŭ), 488,690	E 4
Taejŏn, 173,143	D 3
†Taeyudong	B 2

Taikyŭ, see Taegu	
Tamyang	E 3
†Tanchŏn, 32,761	B 4
Tangyang	D 4
Tongyŏng	E 4
†Tokchon, 15,711	C 3
†Uijŏngbu	D 3
Ŭisŏng	D 4
Ulchin	D 4
Ulsan	E 4
†Unggi, 20,882	A 5
†Unsan	C 2
Wando, 15,142	E 3
†Wiwŏn	B 3
Wŏnju	D 3
†Wŏnsan (Gensan), 112,952	C 3
†Yangdŏk	C 3
Yangyang	C 4
Yechŏn	D 4
Yesan	D 3
Yŏju	D 3
†Yŏnan	D 3
†Yŏngampo	C 2
†Yŏngan	B 4
Yŏngchŏn	E 4
Yŏngdong	D 3
†Yŏnghŭng, 18,445	C 3
Yŏngju	D 4
Yŏngsanpo	E 3
Yŏngwŏl	D 4
Yŏsu, 73,084	E 3

Physical Features

Chandjin R.	B 3
Cheju (Saishŭ) (Isl.)	F 3
Chiri-San (Peak)	E 3
Cho (Isl.)	C 2
Halla San (Peak)	F 3
Han R.	D 3
Hong (Isl.)	E 2
Kanghwa Bay	D 2
Koje (Isl.)	E 4
Korea Bay	C 2
Korea Strait	F 4
Naktong R.	E 4
Oeyŏn (Isl.)	D 2
Paengnyŏng (Isl.)	D 2
Puksubaek-San (Peak)	B 3
Saishŭ (Isl.)	F 3
Sinmi (Isl.)	C 2
Sohŭksan (Isl.)	E 2
Sŏlyu-Bong (Mts.)	C 2
Sorak-San (Peak)	C 4
Tŏkchŏk (Isl.)	E 2
Tolsan (Isl.)	E 3
Tongiosŏn Bay	D 3
Tumen R.	A 4
Ullŭng (Utsuryŏ-Tŏ) (Isl.)	D 5
Yakchi (Isl.)	E 4
Yalu R.	B 3
Yellow Sea	D 2
Yŏngil Bay	D 4

Source: Latest available official figures.

† Cities marked by a dagger are in North Korea. Cities not marked are in South Korea.

Government: South Korea, republic (ruled by military junta); North Korea, republic (communist dictatorship).

Capital: South Korea, Seoul; North Korea, Pyŏng-yang.

Head of State: South Korea, president, elected by popular vote for a 4-year term. North Korea, president.

National Assembly: South Korea, elected by popular vote for a four-year term.

Area: 85,239 square miles (South Korea, 36,152 square miles; North Korea, 49,087 square miles). *Greatest distance:* (north-south) about 480 miles; (east-west) about 200 miles. *Coast line,* about 1,700 miles long.

Elevation: *Highest,* Mount Kwanmo, 8,337 feet; *lowest,* sea level.

Population: About 31,400,000 (South Korea, 21,526,374; North Korea, about 9,850,000). *Density,* about 368 persons to the square mile.

Chief Products: *Agriculture,* barley, cotton, millet, rice, soybeans, wheat. *Manufacturing and Processing,* chemicals, fertilizer, metal goods, pottery, processed foods, rubber goods, textiles. *Mining,* coal, copper, gold, iron, tungsten.

Flag: South Korea (red and blue circle on a white field, black symbols slanted in each corner). North Korea (blue horizontal stripes edged in white at the top and bottom of a red field, with a red star in a white circle). See FLAG (color picture, Flags of Asia).

National Anthem: South Korea, "Aegug-ga" ("Korean National Anthem").

Money: *Basic unit,* Hwan. For its value in dollars, see MONEY (table, Values).

boats, and used them to fight a Japanese invasion in 1592. Other early Korean inventions included a mariner's compass and a suspension bridge.

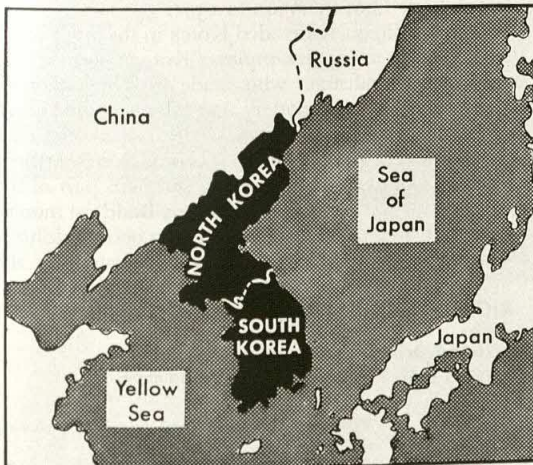
The Land and Its Resources

Location, Size, and Surface Features. The Yellow Sea lies west of Korea, and the Sea of Japan lies to the east. China and a narrow tip of Russia are to the north of Korea. The Korea Strait and part of the East China Sea lie to the south. Korea covers 85,239 square miles.

Korea has many mountains, especially in the north and along the east coast. Mountains cover about four out of five acres of land. There are large plains along the west coast, and smaller plains between the mountains and in river valleys.

Most of Korea's rivers rise in the mountains in the

Korea Lies Between China and Japan.



east and flow west and south to the Yellow Sea. The Yalu River rises north of Korea, in China, and flows southwest. It forms part of the border between Korea and China. The Naktong River flows south to empty into the Korea Strait near the port of Pusan.

The eastern coast of Korea is rocky and steep. In some places there is a narrow coastal plain. But in other places the mountains rise steeply from the water. Bays and islands fringe the western and southern coasts. Korea has many harbors, including Wonsan on the east, Pusan on the south, and Inchon on the west.

Natural Resources. Korea has many kinds of minerals. North Korea has large deposits of coal, iron ore, lead, zinc, copper, gold, graphite, silver, and tungsten. South Korea's mineral deposits are small, except for tungsten. The Sangdong mine in northern South Korea has one of the world's largest tungsten deposits.

About three out of four acres of land in Korea are covered with forests, but many of the trees are small and worthless. There was no forest conservation in Korea until recently. People cut trees for firewood and lumber without regard for future needs. In the north, there still are valuable forests of spruce, fir, larch, and pine. Many of the mountains in the south are covered with pine, oak, and elm trees.

Korea's coastal waters contain many kinds of fishes. Products from the sea account for about one fifth of the value of all exports from South Korea.

Climate. Temperatures in North Korea average about 20°F. in January, and 70°F. in July. South Korea averages about 26°F. in January, and 75°F. in July. Annual rainfall varies from 23 to 45 inches in North Korea, and from 45 to 55 inches in South Korea.

The People and Their Work

The People of Korea are physically similar to the Chinese and Japanese. They usually have straight black hair, dark eyes, and olive-brown skin. The people of Korea generally are taller than the Japanese.

The Korean language has an alphabet with 25 characters. Several characters are grouped together to form syllables. Korean is written in columns, and reads from right to left like Chinese. Koreans usually use Chinese characters in professional writings.

Ways of Life. Many Koreans live much as their ancestors lived. They farm the ground with crude tools and live in small houses with thatched roofs, clay walls, and paper partitions. Homes are heated by hot air from kitchen stoves. The heat passes through an underground channel, warming the floor of the house before it goes up the chimney.

Women in Korea usually



Korea is a little larger in area than the state of Utah.

KOREA

marry young. They generally do not have as much social freedom as men. For many years, girls were not allowed to appear in public, but this custom has died out. Women in South Korea have full political rights.

Many Koreans wear a traditional costume of long, flowing garments made of thin white cloth. The women wash these garments by beating them with clubs.

Cities. Seoul serves as the capital of South Korea. Pyongyang is the capital of North Korea. Pusan is the chief port in Korea. The truce talks held at Panmunjom ended the Korean War. Incheon in South Korea is a Yellow Sea port. Sinuiju in North Korea is an important commercial center. Taegu and Taejon are railroad centers in South Korea. See INCHON; PANMUNJOM; PUSAN; PYONGYANG; SEOUL; SINUIJU; TAEGU; TAEJON.

Agriculture is the most important work for four out of five Koreans. They grow rice as their main crop, devoting about two thirds of their farm lands to it. Barley is the second most important crop. The farmers also raise a seed-bearing grass called *millet*, as well as oats, buckwheat, fruits, cotton, tobacco, corn, potatoes, and other vegetables. Ginseng, a pungent herb used in medicine, is another product of Korea.

Mining and Manufacturing. North Korea has many industrial plants and hydroelectric power stations, and produces most of the peninsula's iron ore. South Korea

has most of the other mining industries of the peninsula. These include valuable tungsten and graphite mines. Before the Korean War in the 1950's, minerals mined in the south were processed in the north.

The chief industry of South Korea is the production of cotton textiles. Silkworm culture and silk spinning are also important industries. Korean factories also turn out rubber products, chemicals, cement, and paper. The first steel mill in South Korea opened in 1956.

Trade is important to both parts of Korea. Both import food, medicines, fertilizer, petroleum, coal, and machinery. South Korea trades almost entirely with the United States and Japan. North Korea carries on trade with Russia and Communist China. Exports from both countries include sea foods, tungsten, graphite, and ginseng.

Transportation and Communication. Railroads and roads connect the important cities of the peninsula. Korea has about 4,500 miles of railroads and about 14,500 miles of highways. Thousands of bridges and many miles of highways and railroads were destroyed during the war. Many Koreans still use pack horses and oxen for moving goods. The rivers are often used for transportation. North Korea is connected by rail with China and Russia. South Korea has steamship and airline connections with Japan, Formosa, and Hong Kong.

Social and Cultural Achievements

Education. Both North and South Korea have worked to increase the number of persons in each country who can read and write. But North Korean schools are used largely to teach Communist propaganda. Children in South Korea must go to school between the ages of seven and thirteen. South Korea has a large number of colleges and universities, some of them founded by missionaries from Europe and the United States.

The Arts of Korea are closely related to those of China. Most Korean literature is written in the Chinese language. The subjects used in both Korean and Chinese arts are much the same. But Korean artists have developed their own techniques, and styles all their own. Famous Korean artistic achievements include mural paintings in the royal tombs at Kokuryo, done from the 30's B.C. to the A.D. 660's; the great bronze bell at Kwangju, cast in the 700's; and the green glazed pottery made from the 930's to 1392.

When the Japanese invaded Korea in the late 1500's, they took back to Japan samples of Korean pottery, and many of the craftsmen who made it. These Korean artists created the fine pottery that later became known as the Satsuma ware of Japan.

Religion. The Buddhist faith was brought to northern Korea in A.D. 372. It reached the southern part of the peninsula in 384. Korea now has many Buddhist monasteries, but there are only about 300,000 Buddhists. Confucianism from China was widely taught in the

RICE IS MORE THAN A FOOD IN KOREA

A Wagon Driver wears a raincoat made of rice straw and grass sewed on thin strips of bamboo.



Village Markets sell grains, including rice, from huge rice-straw baskets.



Black Star



Horace Bristol

KOREA

country from the late 1300's to 1910. Christian missionaries from China settled in Korea in the 1700's. There are about 650,000 Christians in Korea today.

History and Government

Early Days. Korean legends say that Tangun, who lived in the 2300's B.C., was the father of Korean civilization. Korea developed by itself until Kija, an exile from China, led about 5,000 followers to Korea in 1122 B.C. He founded a kingdom called *Chosen*. For hundreds of years, Korea remained under Chinese influence.

From the 100's B.C. to the A.D. 600's, there were three separate kingdoms in Korea. Finally, one kingdom succeeded in conquering the other two, and ruled the whole peninsula. The name of the combined kingdom was *Koryu*, from which we get the modern name *Korea*.

Much of the Chinese civilization in Korea was destroyed in the 1200's, when the Mongol armies of Genghis Khan and Kublai Khan overran the country. In 1392, Yi Tai-jo founded a ruling family, known as the Li dynasty, which controlled Korea for hundreds of years. This dynasty maintained close ties with China.

Japanese Influence. The first Japanese invasion of Korea took place in 1592. In that year, the regent Hideyoshi crossed the Korea Strait with a great army and landed at Pusan. For six years, allied Chinese and Korean forces fought the Japanese back and forth across Korea. The dislike which many Koreans feel toward the Japanese may go back to the terrible cruelties of Hideyoshi. The Koreans finally drove out both foreign armies and shut themselves off from the world, refusing to allow any foreigners to land in their ports. Korea was called the "Hermit Kingdom" for nearly 300 years.

In 1876, Japan forced Korea to open several ports to trade. The United States made a commercial treaty with Korea in 1882. Similar treaties with other countries followed. The Japanese won a war with China in 1895, and Japanese influence in Korea became stronger than Chinese. The Russians challenged this influence, but they lost the Russo-Japanese War of 1904-1905. The Treaty of Portsmouth, which ended the war, gave Japan control over Korea's foreign affairs.

Japan annexed Korea in 1910, and made the Korean emperor a prince. For the next 35 years, Japan developed the Korean economy to benefit only the Japanese, and forced the Koreans into positions of submission.

A Divided Nation. At the end of World War II, in August, 1945, Russian troops occupied Korea as far south as the 38th parallel. A month later, United States forces occupied the southern part of the peninsula. The two occupying powers could not agree on a government for all Korea, and referred the problem to the United Nations. In 1948, a UN commission supervised elections in southern Korea. The communists refused to allow the commission to work in northern Korea.

The communists set up a Russian-style dictatorship in North Korea, with Kim Il-sung as prime minister. North Korea is supposed to have a coalition government. Actually, the Communist party is in complete control of the government.

In South Korea, the people elected 200 members of a National Assembly. The assembly drafted a constitu-

tion and chose Syngman Rhee as president. The new Republic of Korea was proclaimed on August 15, 1948.

Russia announced that all its troops had left North Korea by the end of 1948, and the American troops were withdrawn from South Korea in mid-1949.

Communist armies invaded South Korea on June 25, 1950 (see KOREAN WAR). The people of Korea suffered great hardships in the war. After the UN and communist forces signed an armistice in 1953, the United States and South Korea signed a mutual-defense treaty. The UN and the United States provided funds for a large-scale relief and reconstruction program for the country.

South Korea revised its constitution in 1952, and the people elected Rhee to a second term. In 1954, the UN Command gave South Korea temporary control of the 2,300 square miles of land north of the 38th parallel that had been guarded by UN troops. In 1956, Rhee was elected for a third term as president.

South Korea continued to maintain a 600,000-man army to guard against aggression. Defense costs put the country's economy in a difficult position. The United States maintains six air force bases in Korea.

In March, 1960, Rhee won a fourth term as president. But opposition leaders charged that the elections were dishonest. The government suppressed riots and demonstrations aimed at getting Rhee to resign, but he gave up his office and left the country in April, 1960. The assembly revised the constitution, and elections were held in July. Posun Yun became president and John M. Chang became prime minister.

In May, 1961, Lieutenant General Chang Do Young and a group of Korean military officers overthrew the government. They declared an absolute military dictatorship in June. General Chang said the change was necessary because Prime Minister Chang had not ended corruption in the government.

CHARLES Y. HU

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Outline

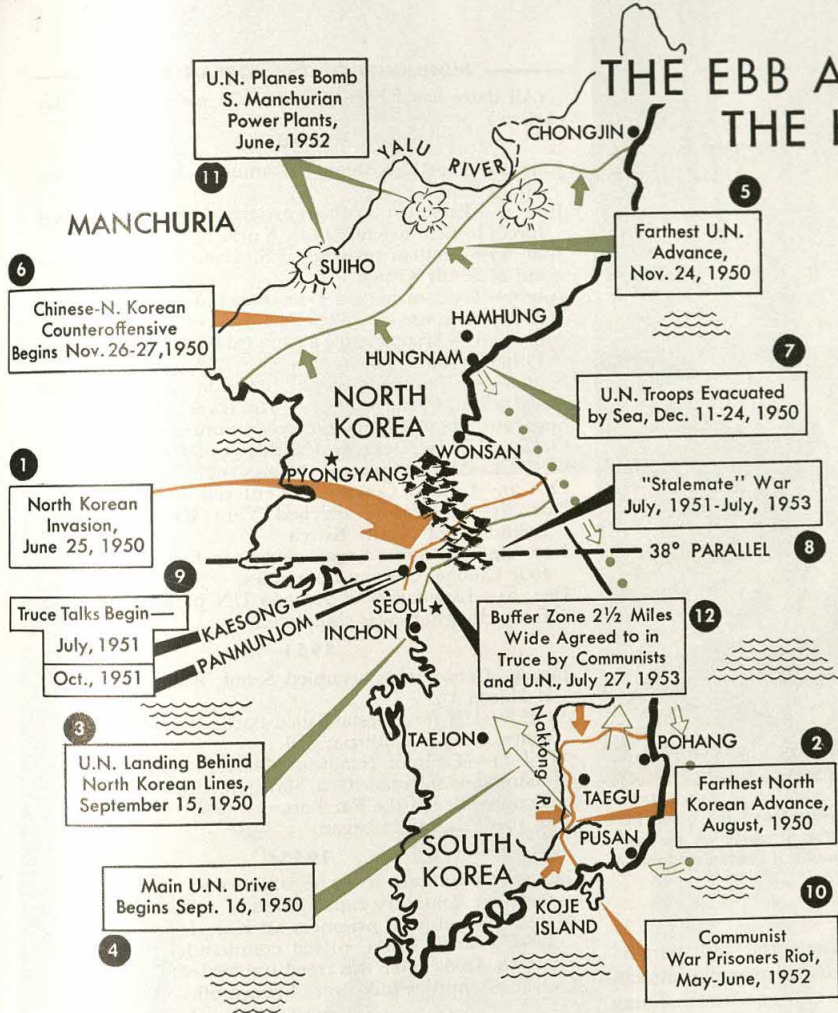
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- III. Social and Cultural Achievements
 - A. Education
 - B. The Arts
 - C. Religion
- IV. History and Government

Questions

- What is the chief industry of Korea?
- Who is considered the father of Korean civilization?
- How much of Korea's land can be used for farming?
- What inventions are credited to the Koreans?
- What two countries have been most closely connected with Korea's history? Why?
- When did Korea become a "Hermit Kingdom"?
- What American state is about the size of Korea? How does it compare in population?

KOREA STRAIT. See KOREA (Location); YELLOW SEA.

THE EBB AND FLOW OF THE KOREAN WAR



The Korean War was one of the bloodiest in history. In the 37 months of fighting, both sides used most of the modern machines of war, except atomic weapons. More than a million civilian men, women, and children of Korea were killed, and several million made homeless. The war caused over a billion dollars' worth of damage. United Nations and South Korean troops suffered more than 1,460,000 casualties. About 2,000,000 Chinese and North Koreans were killed, wounded, or missing.

Causes of Conflict

Korea had been under control of Japan ever since the end of the Chinese-Japanese War in 1895. The Japanese formally annexed Korea in 1910, and ruled it as part of Japan until

1945. At the end of World War II, forces of the United States and Soviet Russia liberated Korea from Japan. Russian forces occupied the area north of the 38th parallel, a line which cuts the country about in half. United States troops were stationed south of the line.

The General Assembly, representing all members of the United Nations, decided in 1946 that elections should be held throughout all Korea to decide on a national government. The Russians opposed this move and would not permit elections in that part of the country Russian forces occupied. In South Korea, elections were held May 10, 1948, under the guidance of the United Nations. As a result, the government of the Republic of Korea was established. The UN recognized its authority over South Korea. North of the 38th parallel the Communists proclaimed a Soviet-style "People's Democratic Republic of Korea."

Both the South Koreans and the North Koreans announced that their respective governments rightfully ruled all Korea. The North Koreans invaded South Korea in an attempt to enforce their claims. They hoped to gain control of the entire peninsula.

First Stages of the War

Outbreak of the War. For several months before June 25, 1950, there had been minor clashes between North

KOREAN WAR (1950-1953) was the first war in history in which troops of a world organization acted as "police" to fight an aggressor nation. The war began on June 25, 1950, when troops of Communist-ruled North Korea attacked South Korea in an effort to unify the country by force. The United Nations charter, signed by the major nations of the world in 1945, had outlawed all such aggression. So the United Nations asked member countries to aid South Korea.

The United States rushed great numbers of troops and huge supplies of equipment to the aid of the South Koreans. Later, other members of the UN sent troops to South Korea. These countries included Great Britain, Australia, Canada, France, the Philippine Republic, Thailand, Turkey, Greece, The Netherlands, Colombia, Ethiopia, Belgium, Luxembourg, New Zealand, and the Union of South Africa.

Russia challenged the right of the United Nations to support South Korea. But the Russians aided the North Koreans by supplying guns, ammunition, planes, and other equipment. Five months after the start of the conflict, Communist Chinese forces entered the war on the side of North Korea.

The fighting ended on July 27, 1953, with a truce in which both sides agreed to try to settle the problems of Korea at an international conference.



Dept. of Defense

Oh, My Aching Feet! Foot soldiers found the going hard as the battlefield shifted from place to place on the rocky Korean peninsula. The steel helmet made a convenient foot tub.

and South Koreans stationed near the 38th parallel. These generally were regarded as guerrilla attacks. Actually, they were skirmishes between hostile forces.

On June 25 North Korean troops, supported by tanks and artillery, crossed the 38th parallel and at one point entered Kaesong, three miles south of the boundary.

The UN Security Council voted 9-0 to adopt a United States resolution calling for immediate cessation of hostilities and demanding that North Korea withdraw its forces north of the 38th parallel. The measure escaped a veto by the U.S.S.R. because the Russian delegate had been boycotting the Security Council since the preceding January. The Russian Government promptly declared that the resolution was illegal and said the aggression was simply a counteroffensive against an attack by South Korean forces.

The North Koreans ignored the cease-fire order and on June 27 swept into the outskirts of Seoul, largest city of Korea and capital of the Republic of Korea. The next day President Truman, with the support of a majority of United Nations members, ordered United States forces to aid South Korea.

On July 1, a battalion of the U.S. 24th Infantry Division was flown from Japan to Pusan at the southern tip of the peninsula. U.S. soldiers began moving toward battle positions north of Taejon, about 75 miles south of Seoul, on the following day.

The Early Days of the War. The North Koreans moved southward almost at will during the first few days of the war. Their tanks rambled along without

HIGHLIGHTS OF THE KOREAN WAR

(All dates are Korean time. U.S. dates are one day earlier.)

1950

- June 25—North Korean Communist troops invaded South Korea.
- June 27—President Truman ordered U.S. air and naval forces to help defend South Korea.
- June 30—Truman ordered U.S. ground troops to the aid of South Korea.
- July 9—Truman named Gen. Douglas MacArthur Supreme Commander for UN forces in the Far East.
- Aug. 3—UN troops, after a general withdrawal, set up Pusan Perimeter in southeast tip of Korea.
- Sept. 15—Allies made amphibious landing behind lines at Inchon, began rout of North Koreans.
- Sept. 26—MacArthur announced capture of Seoul.
- Oct. 7—UN Army crossed 38th parallel.
- Oct. 19—Allies captured Pyongyang.
- Oct. 25—Chinese Communists entered war.
- Nov. 21—UN forces reached Yalu River, northern boundary of North Korea.
- Nov. 26—UN forces began retreat in face of attack by four Chinese Communist armies.
- Dec. 24—Evacuation of 205,000 UN personnel by sea from Hungnam was completed.

1951

- Jan. 4—Communists occupied Seoul; Allies reoccupied it March 15.
- April 8—UN forces established battle lines a short distance north of 38th parallel.
- April 11—Truman removed MacArthur from all his commands and made Gen. Matthew Ridgway Supreme Commander in the Far East.
- July 10—Peace talks began.

1952

- Jan. 3—Communist truce negotiators rejected UN proposal for voluntary repatriation of prisoners.
- May 8—Communist prisoners on Kojima Island captured Gen. Francis Dodd, prison commander, in surprise attack. Dodd later was freed unharmed.
- Oct. 8—Armistice talks were broken off.

1953

- Feb. 11—Gen. Van Fleet, commander of the Eighth Army was replaced by Lt. Gen. Maxwell D. Taylor.
- March 28—Communists accepted UN proposal for exchange of sick and wounded prisoners.
- April—May—Sick and wounded prisoners exchanged.
- April 26—Armistice talks resumed at Panmunjom.
- July 27—Truce agreement signed, with all fighting ended at 10 p.m.
- Oct. 26—Allied and Communist representatives began meetings to set a time and place for a Korean peace conference.

serious opposition. American troops made their first contact with the Communist forces on July 3 at Wonju, 50 miles southeast of Seoul. The North Koreans already had captured Seoul.

On July 9, while U.S. and South Korean troops were trying desperately to stall the advance of the North Koreans, President Truman named General Douglas MacArthur Supreme Commander for UN forces in the Far East. Units of the First Cavalry and 25th U.S. infantry divisions reached Korea July 19 to go to the aid of greatly outnumbered elements of the 24th division. Lieutenant General Walton H. Walker, who had been training U.S. troops in Japan, was named Commander of the Eighth United States Army in Korea on July 13.

But on July 21, Taejon, another major city, fell to the Communists. Major General William F. Dean.



"Long Toms" Fire against Chinese. The self-propelled guns hurl their huge shells 15 miles with accuracy.



"Hands Up!" Command Ends War for a Chinese Red on the Korean front. His captor is with 1st Marine Division.

These Are the Rugged Hills which the Allies won and lost and won again in the "see-saw" war in Korea.

United Press Int.; Wide World

U.S. Marine Stops to Aid Wounded Buddy in heat of battle on Korea's Bunker Hill. He wears a bulletproof vest.

United Press Int.



KOREAN WAR

U.S. 24th division commander who led the defense, disappeared during the battle after heroic personal efforts to stem the advance. More than a year later, it was learned that the North Koreans had captured him.

The Pusan Perimeter. By July 30 the situation for the United Nations forces in South Korea was so critical that Lieutenant General Walker ordered all elements of his Eighth Army "to stand and fight" at any cost. In spite of the arrival of the U.S. First Marine and Second Infantry divisions, by August 2 the American and South Korean troops were forced to withdraw to what became known as the *Pusan Perimeter* of southeastern Korea. This was an area south of a roughly semicircular line running from Pohang on the southeast coast, west around Taegu, and south and southeast nearly to Pusan. The Nakdong River was the boundary of the perimeter in most sectors. The perimeter was about 75 miles long, 50 miles wide, and included 3,850 square miles.

Army men have called the defense of the tiny Pusan Perimeter during the next few days one of the great military feats of all time. General Walker shuttled his limited troops rapidly from point to point to protect weak spots. His tactics apparently convinced the North Korean commanders that the United Nations forces were much stronger than they actually were.

The North Koreans succeeded in crossing the Nakdong River on August 6, but U.S. Marines and Army infantrymen immediately counterattacked and prevented a general breakthrough.

The North Koreans at one time were within shelling distance of Taegu. But they began falling back from that city August 25. United States Army spokesmen estimated that the effectiveness of the 50,000 attacking troops had been "cut in half."

The Communists still were not beaten. On September 3 they launched a final powerful general offensive against the Pusan Perimeter. Three days later they captured Pohang. The Allies finally halted the offensive September 8. United States commanders said they were confident then that they never could be driven into the sea by the North Koreans. The final defense of the

Pusan Perimeter was shared by the first British troops to be shipped to Korea to enter the conflict.

The Inchon Landing. In a lightning surprise move that altered the course of the war, troops of the U.S. 10th Corps made an amphibious landing at Inchon on Korea's west coast on September 15, 1950. Inchon is 24 miles southwest of Seoul and also is the port for the capital city.

The landing was made under the personal direction of General MacArthur. This military maneuver was considered remarkable because of the extreme tides at Inchon, which vary more than 30 feet. This meant that the landings had to be timed to the minute. Otherwise the tides might drop, leaving landing craft and other ships trapped in mud flats.

The operation was designed to cut between North Korean troops in the Pusan Perimeter area and Communist forces farther north. One day after the landing, while United States forces drove toward Seoul, United Nations troops farther south fought out of the Pusan Perimeter. MacArthur announced the capture of Seoul on September 26. Two days later Allied troops which broke away from the Pusan area joined other Allied forces moving south from Seoul.

General Walker declared the North Korean Army no longer existed as a fighting force. MacArthur broadcast a surrender ultimatum, but the North Korean government swiftly rejected it.

U.S. troops for the first time crossed north of the 38th parallel into North Korea on October 8, although South Korean troops had driven across the boundary a week earlier. The North Koreans began a general withdrawal toward Pyongyang, their capital, 100 air miles northwest of Seoul. Pyongyang fell to the Allies on October 19, one day after Republic of Korea (R.O.K.) troops had captured Hamhung and Hungnam.

United Nations troops then began twin drives toward the Yalu River and the Manchurian border. To accomplish this goal, the Allies were divided into two groups—the Eighth Army and the 10th Corps, under separate commands. The Eighth Army marched through northwest Korea toward the Yalu. Elements of the 10th Corps drove through northeast Korea.

Wide World



Truce Negotiators Moved in Opposite Directions for many months, as bitter fighting continued on the battlefield. The United Nations negotiators in one phase of talks at Panmunjom included, left to right, Major General Howard Turner, Rear Admiral R. E. Libby, Rear Admiral Arleigh Burke, Major General Lee Hyung Keun of the Republic of Korea Army, and Vice Admiral C. Turner Joy, chief of the delegation. When the truce finally was signed, the United Nations truce team was headed by Lieutenant General William K. Harrison, Jr.

On October 25, troops of Communist China crossed the Yalu from Manchuria to aid the badly pressed North Koreans. Six days later UN troops made their first contact with the Chinese. The Communist Chinese and North Koreans began a big offensive in northwest Korea November 2. On the same day the Russian-built MIG-15 jet planes made their first appearance in the war.

United States and other UN warships meanwhile roamed up and down the coasts of North Korea, bombarding coastal cities. Navy fliers, stationed on aircraft carriers such as the *Philippine Sea* and the *Valley Forge*, made daily flights into North Korea to join Air Force and Marine pilots in bombing and strafing missions.

Allied commanders still were confident they soon would be victorious, in spite of the tremendous ground push by the Communist Chinese and North Koreans. A unit of the U.S. Seventh Division arrived at Hyesan on the Yalu River on November 21. At the same time more than eight Allied divisions started an offensive in the west. MacArthur said the new attack was aimed at ending the conflict by Christmas.

The Retreat of UN Troops. Hopes that the war would end soon were short lived. The Chinese Reds attacked in strength November 26-27, sending four armies against the Allies. The assault crumpled the UN right flank and tore a hole in defenses in the west. The Allies were forced to begin a general withdrawal.

By the end of November, 1950, the Communists had widened a wedge between Eighth Army troops in the west and the 10th Corps in the east. MacArthur said he was at an extreme disadvantage because his orders from Washington prevented his using air power against the Chinese Communist troops and supplies which were being massed north of the Yalu River in Manchuria.

The Allies began withdrawing from Pyongyang on December 4. Four days later, 20,000 U.S. Marines and infantrymen, surrounded by Chinese, started an historic, bloody drive from the Changjin Reservoir area in north-east Korea to reach the port of Hungnam.

General Walker was killed in a jeep accident on December 23. By Christmas Eve, 205,000 UN fighting men had been evacuated by sea from northeast Korea

at Hungnam, in an "amphibious landing in reverse." Navy guns held the Reds at bay with a bombardment while the UN troops were put aboard ships. In the west, the Communists had crossed south of the 38th parallel to capture Korangpo, 28 miles from Seoul.

The Chinese and North Koreans started a huge new attack against Seoul on New Year's Eve, 1950. This was four days after Lieutenant General Matthew B. Ridgway had taken command of the Eighth Army. By January 10, 1951, the Allies had abandoned Seoul to the Communists and dug in on a line more than 25 miles south of the capital. The maneuver brought an end to the Allied retreat from North Korea.

Final Stages of the War

The Air War. The Korean War marked the first clashes between jet aircraft. Early in the conflict, Allied bombers and fighters based in Okinawa, Japan, and South Korea roared unopposed over North Korea, inflicting huge losses on enemy troops and bases.

But in November, 1950, Russian-built MIG-15 jet planes made their appearance. In later months, as many as 100 to 150 planes took part in aerial dog fights between U.S. F-86 Sabre jets and the MIG-15's. All the air battles occurred over North Korea because UN planes were not permitted to cross the Yalu River into Manchuria and the MIG-15's never ventured south of the 38th parallel. Most of the aerial encounters occurred in "MIG Alley" of northwest Korea, from the Yalu River south to Pyongyang.

After battle lines were established there was less need for close air support of ground troops. The UN aircraft concentrated on destroying Communist supply and communications facilities.

B-29's, introduced by the U.S. in the later days of World War II, were used extensively. They systematically bombed Communist airfields in North Korea, forcing the Reds to rely upon airfields in Manchuria.

In September, 1952, the U.S. Navy launched a new phase of air warfare. A flight of pilotless Grumman F6F

Communists Stalled Peace on War Prisoner Issue. They long refused to consider the Allied proposal that each prisoner be permitted to decide whether he wished to return to his country. They finally gave in on this point and a truce was signed on July 27, 1953. Shown leaving their tents for truce talks are Red negotiators who include, right, North Korean Lieut. Gen. Nam Il, head of the delegation, and, second from left, Chinese Maj. Gen. Hsieh Fang, actually the chief Communist spokesman.



Wide World



United Press Int.

General Douglas MacArthur, middle, planned and executed the brilliant Inchon landing which turned the tide of war in the Allies' favor in September, 1950. He and his aides are shown inspecting the front lines in the Inchon-Seoul area.

TOP UN LEADERS IN THE KOREAN WAR

Gen. Matthew Ridgway, 2d from left below, replaced MacArthur as supreme commander in April, 1951. **Gen. Mark Clark**, right, relieved Ridgway in May, 1952. **Gen. James A. Van Fleet**, 2d from right, headed ground forces (April, 1952-Jan., 1953). **Vice Adm. C. Turner Joy**, left, led truce talks at one stage of the negotiations with the Communists.



Hellcats, equipped with television eyes and other electronic controls, took off from the carrier *Boxer*. They were equipped with heavy charges of explosives, and were used as guided missiles to attack targets 150 miles away in North Korea.

The helicopter was used extensively for the first time in the Korean War. The "flying egg beaters" swiftly transported wounded men from the battle zone to hospitals. The 'copters made many daring rescues of Allied fliers who had been shot down. They also were used for the first time to carry troops into combat.

The United States Air Force, Navy, and Marine Corps lost more than 2,000 planes. Most of these were shot down by Communist anti-aircraft guns. UN fliers destroyed more than 1,000 Communist planes.

U.S. Navy and Marine Corps fliers killed about 100,000 Communist troops. The U.S. Air Force inflicted an estimated 110,925 enemy casualties.

Naval Activity. UN naval forces which at one time or another took part in the war included four battle-ships, 8 cruisers, 16 aircraft carriers, and 80 destroyers. They poured about 4,250,000 rounds of 3- to 16-inch projectiles at Communist shore targets. Wonsan, a large oil refining and industrial city on the east coast, was under naval siege by UN forces for more than a year.

Five United States Navy ships were sunk and 82 others hit during the war. Those sunk were four minesweepers, the *Pledge*, *Partridge*, *Pirate*, and *Magpie*, and one tug, the *Sarsi*.

The See-Saw War. United Nations forces on January 16 began advancing north. In 15 days they were in a position to train artillery shells on Seoul. Ridgway was using a new tactic calling for slower but "clean-sweep" advances which would wipe out all enemy forces instead of by-passing some of them.

On March 15, the Allies reoccupied abandoned Seoul

without a fight. They continued their advance, moving north across the 38th parallel once again.

On April 11, President Truman removed MacArthur from all his commands and put Ridgway in his position. The President's action resulted from a dispute between MacArthur and defense leaders in Washington as to how the Allies should conduct the war. MacArthur had wanted to send UN bombers over Manchuria and use other "all-out measures." Truman and his military advisors believed that such action might be regarded as aggression and touch off World War III. He ordered MacArthur not to discuss publicly the dispute. But MacArthur disregarded the order, and did speak out.

When Ridgway left Korea for Tokyo to assume MacArthur's duties, Lieutenant General James A. Van Fleet became commander of the Eighth Army.

UN forces succeeded in driving a short distance north of the 38th parallel by June, 1951. The battle line then was established a few miles north of the boundary.

During the last two years of fighting, the Korean conflict became known as the "Battle for the Hills." During that period the world became acquainted with such places as "Old Baldy," "White Horse Mountain," and "Siberia Hill," which were all scenes of bitter battles.

Truce Talks. On June 24, 1951, it appeared that the conflict might be near a settlement. Jacob Malik, the Russian delegate to the United Nations, proposed a cease-fire in Korea. Ridgway, acting on instructions from Washington, broadcast a suggestion on June 30 for a meeting between Allied and Communist military officers to discuss an armistice.

The truce talks began July 10 at Kaesong and later were transferred to Panmunjom. The area in which the truce talks were conducted was declared neutral and neither side was to launch any attacks there. The fighting continued elsewhere along the front on a

President-Elect Eisenhower Visited the Korean Front in December, 1952. A Republic of Korea (R.O.K.) officer is shown here giving the American soldier-statesman a "chalk talk" on a large sand table to show how R.O.K. units had taken over certain front-line battle areas.



United Press Int.

small scale, with neither the Communists nor the UN forces making outstanding advances.

The United Nations broke off truce discussions on October 8, 1952, because the Communists would not agree on one point insisted upon by the Allies. This was *voluntary repatriation of prisoners*. The Allies insisted that North Koreans or Chinese Reds captured by UN forces would not be forced to return northward, and that captured South Koreans could remain in North Korea if they so desired. The UN negotiators believed many North Koreans and Chinese had been forced into Communist armies and would prefer to live in South Korea.

It was not until March 28, 1953, that hopes for an armistice rose again. The Chinese and North Korean Communists announced they would accept a UN proposal to exchange sick and wounded prisoners before the war's end. General Mark W. Clark, who had succeeded Ridgway as supreme commander of UN forces in the Far East, said he favored reopening the truce talks, but only if the Communists were sincere in their proposal.

On April 11 the Allies and Communists signed an agreement for the exchange of sick and wounded prisoners. In April and May, 1953, the Communists returned 684 Allied prisoners, including 149 Americans. The Allies sent back 6,670 Red prisoners. The numbers returned compared roughly with percentages of prisoners held by each side.

On April 26, 1953, the Allies and Communists resumed full-scale truce talks at Panmunjom. The Communists finally gave in to the UN demand that no prisoner should be returned to his homeland against his will.

A truce agreement was signed on July 27. It created a 2½-mile-wide buffer zone across Korea, from which troops of both sides withdrew. This line gave South Korea about 1,500 square miles more territory than before the war. A neutral nations commission was created to supervise the truce. It included Sweden, Switzerland, Czechoslovakia, and Poland. The agreement also provided that a political conference should negotiate a peaceful settlement of the Korean question.

Results of the War

Troops and Casualties. In the 37 months of fighting of the Korean War, the South Korean and United Nations forces reached a peak strength of 800,000 men. These forces included 350,000 troops from the United States. By the end of the fighting, the South Korean army had grown to 650,000 men. The North Korean army at its height had a strength of 200,000 men. Chinese Communist forces numbered about 1,000,000 men at peak strength.

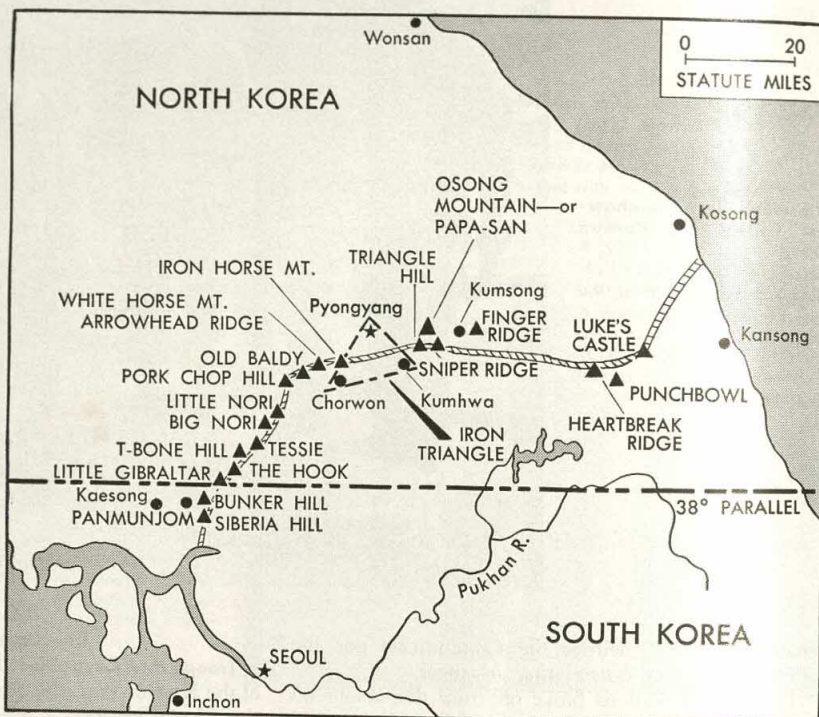
MILITARY CASUALTIES IN THE KOREAN WAR

	Total Casualties	Dead	Wounded	Prisoners or
				Missing
Republic of Korea	1,312,836	415,004	428,568	469,264
United States	157,554	54,246	103,284	24
Other United Nations	17,214	3,094	11,297	2,823
	1,487,604	472,344	543,149	472,111
Communist China and North Korea	2,000,000	...	...	...

Cost of the War. The United States alone spent a total of \$18,000,000,000 on the war. Almost all Korea, excepting the area in the Pusan Perimeter, was virtually laid waste. In South Korea more than 600,000 homes were destroyed, 2,500,000 persons were made homeless, and an estimated 1,000,000 civilians killed. Damage in this section of the country was set at more than \$1,000,000,000. Until December, 1950, relief for South Koreans was handled by the Eighth Army. After that it was directed by the United Nations Civil Assistance Command, Korea. President Eisenhower asked Congress to provide \$200,000,000 for Korean relief after the truce.

Atrocities. In December, 1953, the UN General Assembly approved a resolution that expressed "grave concern" at U.S. reports of atrocities by the Communists. The United States charged that the Communists had killed 38,000 UN military personnel and South Korean

Truce Buffer Zone, $2\frac{1}{2}$ miles wide, was established by the armistice of July 27, 1953. It was set up along the line of the battle front at the time of the truce. Troops of each side withdrew $1\frac{1}{4}$ miles. This demilitarized zone included many of the hills and ridges which were the scenes of bitter fighting in the last two years of the war. An offensive by 80,000 Communist troops in July, 1953, captured Finger Ridge and caused it to be included in the territory occupied by Communist troops.



civilians by torture, starvation, and murder during the war. This figure included 6,113 Americans. The United States charged that communist officers in command of prison camps were responsible for many atrocities. Returning American prisoners of war told many stories of torture.

Peace Negotiations. The 16 UN member-countries that fought in Korea signed a joint declaration in July. They vowed to resist any new Communist attack on South Korea. The truce agreement established an armistice commission of UN and Communist officers and observers to carry out the truce. An exchange of 88,559 prisoners of war was completed in September. The Neutral Nations' Repatriation Commission forces took custody of prisoners who refused to return home. The armistice agreement provided that delegates from home countries could visit these prisoners and persuade them to return. But after the talks, 14,227 Chinese, 7,582 North Koreans, 325 South Koreans, 21 Americans, and 1 Briton still refused repatriation.

Representatives of countries that fought in Korea met in Geneva, Switzerland, in 1954. Russia also attended the meeting. The conference failed to settle the questions of unifying Korea and the withdrawal of all foreign troops. In the late 1950's, Communist forces continued to increase their strength in North Korea. They refused to allow the Neutral Nations' Supervisory Commission to investigate this violation of the truce agreement. Early in 1958, the UN Command announced its forces had received atomic weapons, because of the communist buildup. Communist China later claimed it had pulled all its troops out of North Korea. JERRY THORP

Related Articles in WORLD BOOK include:

Dean, William F.
Korea
MacArthur, Douglas
Peng Teh-huai
Ridgway, Matthew B.
Truman, Harry S.
(War in Korea)

United Nations
Unknown Soldier
Van Fleet, James A.
Walker, Walton H.

Outline

I. Causes of Conflict

II. First Stages of the War

III. Final Stages of the War

IV. Results of the War

Questions

What events led to the outbreak of war in Korea?
What was the role of the United Nations in the war?
What was the *Pusan Perimeter*? *MIG Alley*?
Who commanded the United Nations forces in the war?
How many casualties did each side suffer?
What caused truce discussions to be ended in 1952?
How did the Inchon landings change the war?
How was the United Nations Security Council able to avoid a Russian veto on the Korean question in 1950?
What type of aircraft was used for the first time in combat during the war?
What were the provisions of the 1953 truce?

KORIN, *koh riñ*, **OGATA**, *ohgah tah* (1658-1716), was a Japanese painter. He satisfied the fondness of the wealthy middle-class people for beautiful surroundings more than any other Japanese painter of his time. His art is best seen on folding screens intended to beautify a room. He was an expert in turning his subjects, usually landscapes and close-ups of flowers, into novel, eye-catching designs. He had an extraordinary sense of color and pattern, but did not care for storytelling in drawing. One of Korin's paintings, *Chrysanthemums by the Stream*, appears in color in the **PAINTING** article. He was born in Kyoto.

ALEXANDER G. SOPER

KORNBERG, ARTHUR (1918-), an American biochemist, shared the 1959 Nobel prize in physiology and medicine. He and Severo Ochoa won it for discovering a way to produce nucleic acids artificially. These chemicals play a key role in the mechanisms of heredity and protein production. Kornberg was born in Brooklyn, N.Y., and taught at Stanford University.

KOROSEAL. See **TEXTILE** (Treatments and Finishes).

KORSAKOFF'S PSYCHOSIS. See **ALCOHOLISM**.

KORZENIOWSKI, JÓSEF. See CONRAD, JOSEPH.

KOSCIUSKO, MOUNT. See MOUNT KOSCIUSKO.

KOSCIUSKO, *kos ih US koh*, **THADDEUS** (1746-1817), was a Polish patriot who fought for freedom in America and in Poland. Because he won fame in both America and Europe, people sometimes call Kosciusko "The Hero of Two Worlds."

Kosciusko arrived in America in August, 1776. He offered his services to the Continental Congress, and was appointed colonel of engineers. He built the fortifications at Saratoga and thus contributed to American victory in the battle there. Later, Kosciusko was made responsible for American defenses along the Hudson River. He constructed the fortifications at West Point. After the war, Congress appointed him to the rank of brigadier general.

Kosciusko returned to Poland in 1784. He led the uprising in 1794 that bears his name, in an effort to prevent the third and final partition of Poland by Russia, Prussia, and Austria. At first victorious, thanks to the support of the peasants whom he freed, Kosciusko was later defeated and imprisoned. See POLAND (Partitioning of Poland).

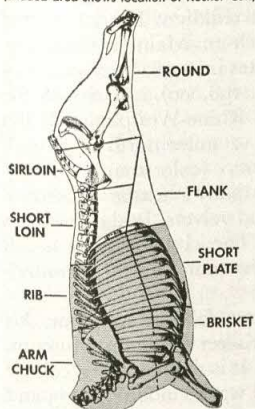
Kosciusko was born in Lithuania. His remains now rest in the historic Wawel Castle in Kraków, burial place of many of Poland's heroes.

CHARLES MORLEY

KOSHER, *KOH sher*, is a Hebrew word meaning ritually correct. It is applied to food considered clean and wholesome according to Jewish ritual. Food which is forbidden to Orthodox Jews is *treifah*, meaning *unfit*. The preparation of foods according to the rules of the Talmud is called *koshering*. Many of the rules are based on health considerations.

Beef Chart shows the location of kosher cuts, shaded area, which Orthodox Jews can eat.

BEEF CHART
(Shaded area shows location of Kosher Cuts)



Thaddeus Kosciusko
Brown Bros.



Lajos Kossuth
Brown Bros.



KOSOVO, BATTLE OF. See SERBIA (History and Government).

KOSSUTH, *KOH shoot*, **LAJOS** (1802-1894), a Hungarian national hero, led the unsuccessful Hungarian rebellion of 1848-1849.

He entered parliament in 1825, and soon became a leader of the movement for liberal government reform. When uprisings broke out in various provinces of the Austrian Empire in 1848, the Hungarians, led by Kossuth, also revolted. They claimed the right to complete independence. But Kossuth then refused to grant independence to the minority populations living in the Hungarian part of the empire. The minorities revolted against Hungarian rule. Russian forces helped the Austrians defeat Kossuth's hastily organized army.

Kossuth fled to Turkey in 1849. There, he was held prisoner for a time. Afterwards, he toured the United States as a guest of the government, and was hailed by Americans as "The Hungarian George Washington." He died in exile. Kossuth was born at Monok, and attended Budapest University.

R. V. BURKS

KOSTELANETZ, ANDRÉ. See POPULAR MUSIC.

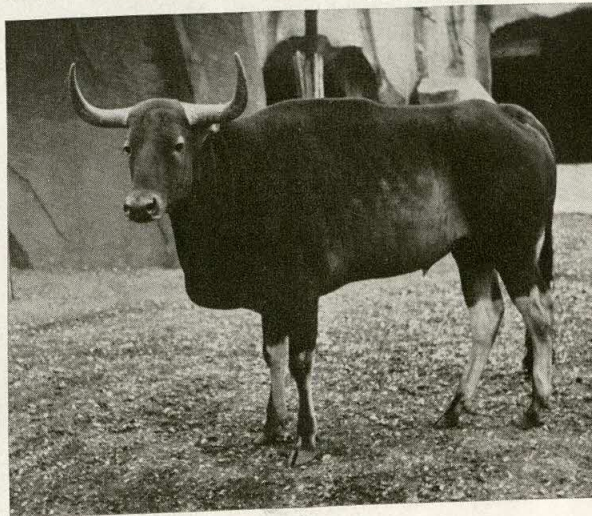
KOTZEBUE. See ALASKA (Interesting Places to Visit).

KOUMISS. See KUMISS.

KOUPREY, also called the *Indo-Chinese Forest Ox*, is a wild ox of northern Cambodia, in southeastern Asia. It is a rare animal that was first discovered in 1937. Before this, there were reports of a strange new beast which the natives called the *kouprey*. It had never been carefully examined. Only about a thousand animals are in existence. Few white hunters have seen any of them.

The Kouprey lives only in northern Cambodia. It resembles oxen, and is believed to be an early ancestor of domestic cattle.

Parc Zoologique, Paris



LOUIS L. MANN

KOUSSEVITZKY, SERGE

The koupley seems to be a very primitive form of ox. More than any of its relatives, it resembles ancient oxen in its skull and the core of its horns. The horns themselves are up to 32 inches long and curved. They are set wide apart. Those of the bull are curved backward, while the cow's horns rise like a lyre. The bull's hide is blackish-brown, and its hair is short and glossy. Both cow and calf are gray. The koupley has small narrow ears, a large dewlap, long slender legs and hoofs, and a long tail. Nothing is known of its life history.

The koupley is probably one of the earliest ancestors of domestic cattle. Its discovery is important to scientists who are searching for living relatives of cattle of the Stone Age.

Scientific Classification. The koupley is classified as genus *Bos*, species *sauveli*.

VICTOR H. CAHALANE

KOUSSEVITZKY, *KOO suh VITS kih*, **SERGE** (1874-1951), was a distinguished symphony orchestra conductor and an expert double bass player. He conducted the Boston Symphony Orchestra from 1924 to 1949. In this post he helped popularize American music.



Bachrach

Serge Koussevitzky

Koussevitzky was born at Tver, Russia. His father, a musician, gave him his first music lessons. He joined an orchestra at nine, and two years later acted as a substitute for the conductor. Koussevitzky studied at the Philharmonic School in Moscow when he was 14. In 1910, he organized an orchestra in Moscow, and toured Russia to bring music to thousands of people who had never before heard an orchestra.

From 1918 to 1920, Koussevitzky conducted the State Orchestra of the Soviet Union. He left Russia in 1920 to conduct orchestras in western Europe. In 1924, Koussevitzky came to the United States. He founded the Berkshire Music Center at Lenox, Mass., in 1938. He also set up the Koussevitzky Music Foundation in 1942 to assist composers.

IRVING KOLODIN

KOVNO, officially KAUNAS. See KAUNAS.

KRAAL. See AFRICA (Ways of Life).

KRAFT, ADAM. See SCULPTURE (Germany).

KRAG-JORGENSEN. See RIFLE.

KRAKATOA, *KRAH kuh TOE uh*, or **KRAKATAU**, is a volcanic island that lies in Sunda Strait, about halfway between Sumatra and Java. When this volcano erupted in August, 1883, it caused one of the world's worst disasters. Much of the island was blown to bits. A huge tidal wave washed over the shores of nearby islands, killing about 36,000 people. For a year afterward, volcanic dust floated about this region. It has been said that the reflection of the sun on this dust could be seen as far away as London, and the dust in the upper atmosphere traveled around the world many times before it settled.

Krakatoa has erupted several times in recent years. Volcanic action often causes islands to appear and disappear suddenly in this region.

JUSTUS M. VAN DER KROEF

See also MOUNTAIN (color picture, Mountains of the World).

KRAKÓW, *KRAH koo* (pop. 423,000), has been an important cultural center of Poland for centuries. The city lies on the Vistula River in Poland, 155 miles southwest of Warsaw. For location, see POLAND (color map). Kraków produces chemicals, leather goods, machinery, paper, and textiles. Some of the world's largest salt mines are just eight miles from Kraków. Famous buildings include the former royal castle of Wawel, the Holy Virgin Church in the Old Square, and the Gothic Cathedral where Polish kings were crowned and buried. The city is the home of Jagiellonian University, founded in 1364, and of mining and fine arts academies. Kraków served as Poland's capital from 1320 until the end of the 1500's. Then the Polish government moved the capital to Warsaw.

M. KAMIL DZIEWANOWSKI

KRAMER, "JACK," JOHN A. See TENNIS (Famous Tennis Players).

KREBS, HANS ADOLF (1900-), a German biochemist working in England, shared the 1953 Nobel prize for physiology and medicine. He received the award for his discovery in 1937 of the citric acid cycle



Albert & Mary Lasker Foundation
Hans Adolf Krebs

in sugar metabolism (see METABOLISM). The Krebs cycle explained how tissues use carbohydrates to form various acids and liberate energy. The cycle also concerned fat and protein metabolism. In 1932, Krebs announced the discovery of how another cyclic process forms urea in the liver. He was born on Aug. 28, 1900, in Hildesheim, Germany, and was graduated from Hamburg University in 1925.

HENRY H. FERTIG

KREDEL, FRITZ (1900-), an American illustrator, became widely known for his woodcuts. His illustrations appeared in editions of *Grimm's Fairy Tales*, *Robinson Crusoe*, Charles Dickens' *A Christmas Carol*, *Soldiers of the American Army*, and *My First Geography of the Americas*. Kredel was born in Michelstadt, Germany. He received the town's medal of honor in 1956 for his work in illustrating books for children. Kredel studied at an art school in Offenbach-am-Main in Germany. He moved to the United States in 1938.

NORMAN RICE

KREFELD, *KRAY felt* (pop. 198,000), is a city in the West German state of North Rhine-Westphalia. It lies on the Rhine River, about 12 miles north of Düsseldorf. For location, see GERMANY (color map).

Krefeld is a center of Germany's textile industries, especially noted for its silks and velvets. It also produces dyes, machinery, and steel. The city serves as a rail center, a port, and as a business center for the surrounding agricultural area.

Linn Castle in Krefeld has a folklore museum. Art exhibitions are held at the Kaiser Wilhelm Museum. The city has a civic orchestra. It is the home of a college of textile engineering. Krefeld was founded in 1373 and soon became a great linen-weaving center. Silk replaced linen as the chief product in the 1700's. In 1954, a large new corn-starch plant was built there.

JAMES K. POLLOCK

A View of the Kremlin from Lenin's study, now a part of the Lenin Central Museum, shows one of the citadel's elaborate cathedrals. The old imperial palace and many other historic buildings stand within the great walled area.



USSR Magazine from Sovfoto

KREISLER, KRICE ler, FRITZ (1875-), ranks as one of the best-loved violinists of all time. He was also a composer. He made his debut in New York City when he was 13, and toured the United States with the pianist Moritz Rosenthal. He then returned to Europe, where he studied medicine and art, and served one year in the Austrian Army.

In 1899, Kreisler made his Berlin debut, and the following year toured the United States again. He rejoined the Austrian Army at the outbreak of World War I, and was wounded at Lemberg.

In 1939, after Germany annexed Austria, Kreisler became a citizen of France. But he soon settled in the United States, where he continued his concerts. He was seriously injured in an automobile accident in 1941, but was able to resume his career in 1942. His compositions include "Caprice Viennois," "Tambourin Chinois," "Liebesfreud," "Liebeslied," "La Gitana," "Schön Rosmarin," "The Old Refrain," and an arrangement of Nicolò Paganini's *Concerto No. 1 in D major* for violin. Kreisler also became known for his arrangements of Robert Schumann's "Träumerei" and of Antonín Dvořák's "Humoresque."

Kreisler was born in Vienna, Austria. His father, a physician and amateur violinist, gave him his first violin lessons, and he was accepted as a pupil at the Vienna Conservatory when he was seven years old. Three years later, he entered the Paris Conservatory and studied there under Joseph Massart and Léo Delibes.

DOROTHY DELAY

Fritz Kreisler

Black Star



KREMLIN is the fortified part of a Russian city. The name comes from the Russian word *kremľ*, which means *fortress*. The best-known citadel of this class is the Kremlin of Moscow. It has a triangular enclosure a mile and a half around. It is fortified by walls topped with towers. The present walls have stood since 1492.

The Kremlin contains a bewildering number of complex buildings from different dates in history. The picturesque domes of the cathedrals of the Assumption, the Annunciation, and the Archangel Michael give variety to the fortress. Two of these cathedrals were built by the Italian architect Fioravanti in the late 1400's. At that time, Emperor Ivan III wanted to make Moscow the center of eastern culture to replace Constantinople, which had been captured by the Turks.

Much of the palace work dates from the Renaissance period. It is largely the product of Italian architects. The whole Grand Palace was designed by the Italian Baroque architect Rastrelli. It was almost completely destroyed by fire when Napoleon invaded Moscow in 1812. The present palace which replaced it is a simple, classic building of the first half of the 1800's.

Any view of the Kremlin from the outside is breathtaking. Its multitude of gilded domes, its pyramidal gate towers, and the contrast of the threatening boundary wall with the extreme richness and intricacy is striking. Inside, the variety of styles and the lavish decoration give an impression of powerful magnificence.

The Kremlin was closed to the public by the communists, who made it their main government center. Joseph Stalin lived within its walls. After his death in 1953, many government offices were moved outside the walls, and the Kremlin became a national museum. The buildings were painted in bright colors. The domes were regilded. The Kremlin's historical treasures include paintings, jewels, and czarist crowns.

ALAN K. LAING

See also RUSSIA (picture).

KRENEK, ERNST

KRENEK, *KREH nek*, **ERNST** (1900-), is a Viennese-American composer. He studied in Vienna and Berlin, and began composing in his teens. Jazz rhythms played a part in his early works, and his successful opera, *Jonny Spielt Auf* (1927), used jazz as well as traditional elements. Krenek moved to the United States in 1939, and became a citizen in 1945. He wrote important books and articles, in addition to five symphonies, choral and chamber music works, operas, and smaller pieces.

HOMER ULRICH

KRESGE FOUNDATION is a nonprofit corporation with the general purpose of promoting all the means of human progress. It makes financial grants to other organizations to aid them in their work. Its major areas of interest include children's and youth groups, aged and handicapped groups, medicine, health, hospitals, and colleges.

Sebastian S. Kresge, a prosperous merchant, established the foundation in Detroit, Mich., in 1924, with an initial gift of \$1,300,000. He made 13 other gifts to the foundation to bring his total contributions to more than \$60,000,000, from the income from which the foundation makes its grants. The Kresge Foundation has an income of more than \$4,000,000 a year available for grants. It has headquarters at 2727 Second Ave., Detroit 32, Mich. See also **FOUNDATIONS** (table).

KRESS, SAMUEL HENRY (1863-1955), an American businessman and art collector, founded S. H. Kress & Company, one of the largest chains of department stores in the United States. In 1887, he bought a stationery store, and by 1896 had opened his first five-and-ten-cent store in Memphis, Tenn. He collected Italian art and left much of his collection and fortune to the National Gallery of Art. Kress was born at Cherryville, Pa. He became a teacher at 17. HAROLD F. WILLIAMSON

KREUGER, KROO gur, IVAR (1880-1932), achieved world-wide fame for his remarkable ability as a business promoter and international financier. During and after World War I, he gained control over the sale of 65 per cent of the world production of matches. Through an international trust, centering in the Swedish Match Company, he eventually dominated 250 concerns in 43 countries. The stock market crash of 1929 undermined his business, and Kreuger committed suicide three years later. It was later revealed that he had often used dishonest and unscrupulous methods in his business. He was born in Kalmar, Sweden.

RICHARD D. HUMPHREY

See also **MATCH** (The First Safety Matches).

KREUTZER, KROIT zer, RODOLPHE (1766-1831), was the virtuoso violinist to whom Beethoven dedicated his *Sonata in A major*, "The Kreutzer sonata." He was born in Versailles, France. At 13, he composed and played his own violin concerto. Sponsored by Marie Antoinette, Kreutzer wrote operas, taught, conducted, and toured Europe. His book of études is still used for training violinists.

DOROTHY DELAY

KREWES. See **MARDI GRAS**.

KRIEMHILD. See **NIBELUNGENLIED**.

KRIM, ABD-EL. See **MOROCCO** (French and Spanish Control); **RIF**.

KRIS, or KRISE. See **MALAYA** (The People); **PHILIPPINES** (Family Life).

KRISHNA. See **HINDUS**; **VISHNU**.

KRISHNA MENON, VENGALIL KRISHNAN (1897-

), an Indian statesman, was appointed minister of defense for India in 1957. He often criticized the foreign policy of both Great Britain and the United States. He was born in southern India, and studied at the University of Madras and in London. While in England, he became active in the Labour party. As secretary of the India League from 1929 to 1947, he was prominent in the Indian independence movement. Krishna Menon was appointed a delegate to the United Nations. He also served as Prime Minister Nehru's personal representative, visiting major cities throughout the world. He was India's ambassador to Ireland from 1949 to 1952.

T. WALTER WALLBANK

KROEBER, KROH bur, ALFRED LOUIS (1876-1960), an American anthropologist, became noted for his studies of the Indians of California and his contributions to the theoretical study of human culture. Kroeber was born in Hoboken, N.J. He taught at the University of California, and made it one of the great centers of anthropological study. His major works include the textbook, *Anthropology* (1923); *Configurations of Culture Growth* (1947); and *Cultural and Natural Areas of Native North America* (1954).

DAVID B. STOUT

KRONA, KROH nuh, is a standard coin of Iceland and Sweden. The Icelandic krona is made of aluminum-bronze. The Swedish krona is made of silver. For values of the krona, see **MONEY** (table, Values).

KRONE, KROH neh, is a standard coin of Denmark (including Greenland) and Norway. The Danish krone is made of aluminum-bronze. The Norwegian krone is made of copper-nickel. For values of the krone, see **MONEY** (table, Values).

KROPOTKIN, PETER. See **ANARCHISM**.

KRUGER, KROO ger,

"OOM PAUL," PAULUS (1825-1904), was a South African statesman and soldier. He fiercely resisted the British in the Boer War of 1899 to 1902. A frontiersman, uneducated and simple in his ways, he was deeply religious. His people called him "Oom (Uncle) Paul."

He was born STEPHANUS JOHANNES PAULUS KRUGER in the British Cape Colony. His family moved in the



BROWN BROS.

Paulus Kruger

"Great Trek," when many of the Dutch Boers traveled north into Africa to escape British rule. Kruger became famous as a hunter and fighter.

Kruger's family helped organize the Transvaal, the new Dutch state in South Africa. After much internal feuding and opposition from the British, the little country obtained its freedom in 1884. Kruger served as president from 1883 to 1900. But the discovery of gold brought thousands of *Uitlanders* (foreigners), mostly British, to the republic. Serious differences arose, and war broke out with Britain in 1899 (see **BOER WAR**). Kruger tried unsuccessfully to get European aid, and he died in exile.

T. WALTER WALLBANK

KRUGER NATIONAL PARK. See **SOUTH AFRICA** (What to See and Do).

KRUMGOLD, JOSEPH (1908-), is an American author, and motion-picture writer and producer. He received the Newbery medal in 1954 for his book, . . . *And Now Miguel*, based on a motion picture of the same name. It is a story about a Spanish family named Chavez, who raised sheep in New Mexico for many years. The story is rich in the traditions of the old Spanish-American settlers of the Southwest. Krumgold won the medal again in 1960 for his book *Onion John*. He is also known for creating documentary motion pictures in which the story is as important as the facts.

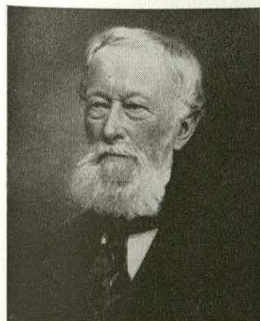
Krumgold was born in Jersey City, N.J. He was educated at New York University. GEORGE E. BUTLER

KRUPP, *kroop*, is the name of one of the leading German industrial families. The Krupp firm became one of the greatest in the world producing munitions, steel, and machinery.

Friedrich Krupp (1787-1826) founded the Krupp works at Essen in 1811. His son, **Alfred Krupp** (1812-1887), later took over and developed the firm from one with four workmen to one employing 20,000. He invented the seamless railway tire, an important development for railroads throughout the world. He also perfected a method of casting steel cannon which helped Prussia defeat Austria in 1866 and France in 1870, and gave the Krupps control of Germany's arms industry.

Friedrich Alfred Krupp (1854-1902), the son of Alfred Krupp, expanded the company's shipbuilding activities. He had one child, Bertha, for whom the "Big Bertha" long-range guns of World War I were named. She married **Gustav von Bohlen und Halbach** (1870-1950), whom the Kaiser permitted to bear the name of Krupp. He became head of the firm.

After World War I, the Allies reduced the firm's steel capacity and forbade it to make munitions. Concentrating on peacetime goods, Gustav Krupp rebuilt the company. But under Adolf Hitler, the Krupps produced arms again. After World War II, Gustav Krupp escaped trial as a war criminal because of illness. But his son, **Alfried Krupp von Bohlen und Halbach** (1907-), was sentenced to 12 years in prison. The company was confiscated after World War II. But in 1951 Krupp was freed.



Krupp; Culver

Alfred Krupp, above, son of the founder of the Krupp Works, established the firm's leadership in Germany's arms industry by perfecting a method of casting steel cannon, right.



KU K'AI-CHIH

Krupp purchased equipment and rebuilt the firm. Much of it had been destroyed during World War II. The firm now makes only industrial machinery. The Krupps have had a social security program for 100 years, and the workers have never struck. DONALD L. KEMMERER

See also **ESSEN** (picture).

KRUSE, KÄTHE. See **DOLL** (Europe).

KRUTCH, *krootch*, **JOSEPH WOOD** (1893-), is a drama critic, teacher, and writer. He wrote theater history; criticism; studies of nature; and biographies of Edgar Allan Poe, Samuel Johnson, and Henry Thoreau. *The Desert Year* (1952) shows his interest in Arizona. Krutch was born in Knoxville, Tenn., and did graduate work at Columbia University. He taught at Columbia for most of his career. JAMES WOODRESS

KRYPTON, *KRIP tahn* (chemical symbol, Kr), a colorless and odorless gas, is one of the chemical elements. It has an atomic number of 36, and an atomic weight of 83.80. An extremely rare element, krypton occurs in gases from certain hot springs, and makes up about one millionth of the air by volume. Krypton is prepared by evaporation from liquid air. The liquid krypton boils at -152.9°C . It also has been frozen to a solid, which melts at -157°C .

Sir William Ramsay and Morris Travers (1872-), two British chemists, discovered krypton in 1898. It belongs to a group called the inert gases, because they react with no other substances. No compounds of krypton have been produced or discovered. Because krypton is inert, it is used to fill certain kinds of electric lamps. See also **RAMSAY**, **SIR WILLIAM**. GEORGE L. BUSH

KSHATRIYA. See **CASTE**.

KU K'AI-CHIH, *GOO KIE-jir* (A.D. 345?-406?), was the first Chinese painter recognized as a great master. His specialty was portrait painting. His skill in catching the spirit as well as the look of his subjects made him seem like a magician to his contemporaries. His works illustrated moral stories and sermons. His most famous work is a scroll, *The Admonitions of the Empress*. One section of this scroll, *The Toilet Scene*, appears in the **PAINTING** article. ALEXANDER C. SOPER

KU-KLUX KLAN

KU-KLUX KLAN, *kyoo klucks KLAN*, was an organization that rose to power in the South after the Civil War. The name *Ku-Klux* comes from the Greek word *kyklos*, which means *circle*.

In the 1800's. The Klan was founded at Pulaski, Tenn., in 1866, as a social group for war veterans. But many Southerners began to use the Klan to terrorize former slaves. The Klan spread rapidly throughout the ex-Confederate states. In 1867, the group was formally reorganized as "The Invisible Empire of the South" with a *grand wizard* at the head of the organization. Each *realm*, or state, was ruled by a *grand dragon*, and a *titán* headed each *province*, or county. A *grand cyclops* ruled each *den*, or local unit.

During the Reconstruction period, most Southern leaders lost the right to vote (see RECONSTRUCTION). Freed Negroes and carpetbaggers from the North gained control of state and local governments. Klansmen tried to prevent the Negroes from voting. They rode at night, wearing masks and white cardboard hats. They draped themselves and their horses in white sheets.

The Klan grew more violent in its methods. Klansmen frightened, flogged, tortured, and lynched Negroes and Negro sympathizers. But the Klan was not guilty of all the crimes committed in its name. It was only one of many organizations that used disguises, secrecy, and terror against the Negroes and carpetbaggers. Any group of men could disguise themselves in sheets and call themselves klansmen.

Finally, even the Klan's officers were eager to put an end to the organization. In 1871, Congress passed the Force Bills, which gave the President power to suppress the Klan as a conspiracy against the government (see FORCE BILL). The Klan soon disappeared. After the

Southern whites regained control of their state governments, there was no longer any excuse for the continued existence of the Klan.

In the 1900's. A new Ku-Klux Klan was organized in Atlanta, Ga., in 1915. It directed its activities against Negroes, Jews, Roman Catholics, so-called radicals, and foreigners. The revived Klan spread throughout the United States. At the height of its power, the organization had perhaps 5,000,000 members. It became a powerful political force in many states. D. C. Stephenson, head of the Klan in Indiana, became virtual dictator of that state.

Klansmen burned fiery crosses and flogged, lynched, and tortured people whose behavior they did not like. After the 1920's, the Klan lost headway. In 1928, the official name of the organization was changed to *Knights of the Great Forest*, but it continued to be known as the Ku-Klux Klan. It was formally dissolved as a national body in 1944, because it could not pay \$500,000 in back taxes to the federal government.

Klan groups began to appear again after World War II. In 1949, groups from six Southern states met in Montgomery, Ala., and formed a national organization. Klansmen flogged many persons and burned crosses. In 1952, more than 60 klansmen in North Carolina were convicted on charges of assault and conspiracy to kidnap. The Klan was revived again after the Supreme Court of the United States outlawed compulsory racial segregation in public schools. In 1955, a new Klan formed in Georgia. It described itself as "an organization for social and charitable purposes." A new "militant action" Ku-Klux Klan was organized in Birmingham, Ala., in 1956. Its leaders publicly denied any links with the old Klan and promised to stay within the law. But, in 1957, members of the Klan were found guilty of kidnapping a Florida Negro.

DAVID DONALD

Ku-Klux Klan Members Wear White Robes and Hoods Before a Burning Cross at a Night Ceremony.

Wide World





Newberry Library

Kublai Khan ruled much of Asia and Europe in the 1200's.

THE MONGOL EMPIRE UNDER KUBLAI KHAN

Frontier - - - - -
Border of empire directly ruled by Kublai }



Adapted Courtesy China: A Short Cultural History by C. P. Fitzgerald, published by Frederick A. Praeger, Inc.

KUALA LUMPUR, *KWAH luh LOOM poor* (pop. 175,961; alt. 160 ft.), is the capital and second largest city of the Federation of Malaya. It lies in the southern foothills of the Central Range, about 200 miles northwest of Singapore (see **MALAYA** [map]). Kuala Lumpur's origin dates back to the late 1800's, when it became a tin-mining center. It serves as the center of Malaya's rubber plantation belt, which extends inland along the shores of the Strait of Malacca. Kuala Lumpur is also the hub of the country's railway system. When the Federation of Malaya was set up in 1948, Kuala Lumpur was chosen as its capital. It had never been the seat of a Malay sultanate, so was free from association with the government of any of the states that joined to form the federation.

JOHN F. CADY

KUBELIK, *KOO beh lik*, is the family name of two Czech musicians, father and son.

Jan Kubelik (1880-1940) was a violin virtuoso and composer. He was born in Michle, near Prague, Czechoslovakia. His father gave him his first violin lessons, and he made his debut in 1888. He studied at the Prague Conservatory, and later gave concerts in many parts of the world. He settled in the United States in 1935.

(**Jerinym**) **Rafael Kubelik** (1914-) became director of the Covent Garden Opera in London in 1955. From 1950 to 1953, he conducted the Chicago Symphony Orchestra. He was born in Býchory, Czechoslovakia, and studied with his father. He was graduated from the Prague Conservatory in 1933. Kubelik conducted orchestras and operas in Czechoslovakia from 1936 to 1948. Kubelik later appeared as guest conductor of many leading orchestras throughout the United States and Europe.

DAVID EWEN

KUBITSCHKEK, *koo bih SHEK*, **JUSCELINO** (1902-), a surgeon was presi-

Juscelino Kubitschek

Wide World



dent of Brazil from 1955 to 1960. As president, he encouraged national development in education and industry. He was mayor of Belo Horizonte from 1940 to 1945, and gained a reputation for city planning. Kubitschek became governor of the state of Minas Gerais in 1950, and encouraged the construction of highways and electric-power plants. He also served in the National Congress of Brazil. He was born in Diamantina in eastern Brazil.

HAROLD E. DAVIS

KUBLAI KHAN, *koo blye KAHN* (1216-1294), the grandson of Genghis Khan, founded the Mongol, or Yüan, dynasty that ruled China from 1260 to 1358. Kublai was the son of Tolui and brother of the fourth Great-Khan, Mangu. Kublai conquered Yunnan and Annam, and when Mangu died in 1259, Kublai became Great-Khan and ruler of the Mongol empire. But his other brothers did not recognize Kublai's new position. They disregarded Genghis Khan's warning to his heirs to remain united under one recognized Great-Khan. As a result, the unity of the All-Mongolia Empire was ended.

Kublai established his capital in Peking in 1264. His forces took Hangchow, the capital of the Sung dynasty, in 1276 and in the same year destroyed the Sung fleet near Canton (see **CHINA** [Mongol Invasion]). By 1279, Kublai had completed the conquest of China. For the first time in Chinese history, a "barbarian" people had conquered the whole country. Burma, Cambodia, and other countries of southeast Asia were forced to recognize the Yüan dynasty as their rulers. However, Kublai's attempts to conquer Japan and Java failed.

Under Kublai's rule, art and science flourished, and cultural relations were established with countries throughout the world.

FRANZ MICHAEL

See also **GENGHIS KHAN**; **MONGOL EMPIRE** (Later Empire); **POLO**, **MARCO**.

KUCHING, *KOO ching* (pop. 47,000; alt. 75 ft.), is the capital and chief city of Sarawak, a British colony on the island of Borneo. The city stands on the Sarawak River, about 18 miles from the river mouth. Kuching, a center for fishing and livestock trade, exports pepper, petroleum, and timber. The British founded the city in 1841. See also **SARAWAK**.

JUSTUS M. VAN DER KROEF

KUDU

KUDU, *KOO doo*, is one of the largest and most unusual antelopes. There are two species, both from Africa. The *greater kudu* stands 58 to 60 inches high at the shoulder. It weighs about 600 pounds. It is reddish to dark bluish gray, with four to ten white stripes up and down its sides. The *lesser kudu* is about 40 inches high, weighs about 230 pounds, and is dark yellowish gray. Its home is in the low country of east-central Africa.

Scientific Classification. Kudus are in the family *Bovidae*. The greater kudu is genus *Strepsiceros*, species *strepsiceros*. The lesser kudu is *S. imberbis*.

VICTOR H. CAHALANE

See also **ANIMAL** (color picture, Africa); **ANTELOPE**.

KUDZU, *KOOD zoo*, is the name of a vine which comes from China and Japan. It is a hairy plant with wide leaves and fragrant, violet-purple flowers. The vine sometimes grows to a height of 60 feet. People in the Orient eat the thick, starchy roots of the plant, and the stems are made into a fiber called *kohemp*. Kudzu blooms in the late summer. It can be raised from the roots, from cuttings, or from the seeds.

The plant was first brought to the United States in 1895. For many years it was grown as a climbing porch vine, but farmers in the South now plant it in eroding soil. It grows rapidly and covers the soil. It sends out many roots, which make a network to hold the soil. This stops erosion. The large leaves fall in autumn and cover the ground. The nitrogen-fixing bacteria that live on the roots of the kudzu enrich the soil.

Scientific Classification. The kudzu belongs to the family *Leguminosae*. It is classified as genus *Pueraria*, species *thunbergiana*.

HAROLD NORMAN MOLDENKE

KUFA, a boat. See **IRAQ** (picture, Round Kufas).

KUHN, *koon*, **RICHARD** (1900-), a German chemist, won the 1938 Nobel prize for chemistry. But the Nazi government forced him to decline it. He did notable vitamin research, especially on the carotene-like substances (see **CARROT**). He isolated riboflavin (vitamin B₂) from egg albumin. Kuhn was born in Vienna. He became director of the biochemistry section of the Max Planck Institute in 1937.

K. L. KAUFMAN

KUIBYSHEV. See **KUXBYSHEV**.

KUKENAAM, *koo kuh NAHM*, **FALLS**, on the Cuquen River in Venezuela, is one of the three highest waterfalls in the world. The water falls 2,000 feet (see **WATERFALL** [color picture]). Kukenaam stands near the British Guiana border.

KUKUI, *koo KOO ih*, is the state tree of Hawaii. It has long spreading branches with light green leaves. It is found on mountain slopes, and may grow as high as 60 feet. The kukui is popular as a shade tree. It also produces oil which is used as fuel and in varnishes.

Scientific Classification. The kukui is in the family *Euphorbiaceae*. It is genus *Aleurites*, species *mouliucana*.

See also **HAWAII** (color picture).

KUKULCAN. See **MAYA** (Religion).

KULLMAN, **CHARLES** (1903-), is an American tenor. He made his opera debut with the American Opera Company in 1928 and sang with the Kroll Opera in Berlin in 1931. He first sang with the Metropolitan in 1935. Kullman was born in New Haven, Conn.

KUMASI. See **GHANA**.

KUMISS, *KOO mis*, or **KOUMISS**, is a fermented beverage made in Russia from mare's or camel's milk. Milk

which has been dried in the sun is placed in a bowl, and fresh milk added. The mixture is allowed to ferment for about 48 hours, during which time the bowl is shaken violently from time to time to churn the butterfat. The fat is then removed. A kind of kumiss is made from cow's milk by adding sugar to milk and allowing the mixture to ferment in open tanks.

Kumiss is nutritious and easily digested. The diets of dyspeptics, tubercular patients, and those who are recovering from fever often contain kumiss.

KUMQUAT, *KUM kwaht*, is a citrus fruit related to the orange. It looks like an oblong orange, but is only slightly larger than a Brazil nut. The kumquat tree is a dwarf evergreen about 10 feet high, but many reach 15 feet under favorable conditions. It stands frost better than an orange tree. The kumquat is native to China,

Kumquats resemble oranges, but they are much smaller and have an oblong shape. The fruit grows on dwarf evergreen trees.

Florida State News Bureau



and is widely cultivated in Japan. California, Florida, and the Gulf Coast also raise this fruit. Kumquats are candied and made into preserves, marmalade, and jelly. People also eat the fresh fruit. See also **PLANT** (color picture, Fruits Unknown to Our Forefathers).

Scientific Classification. The kumquat belongs to the family *Rutaceae*. It is genus *Fortunella*, species *japonica* or *margarita*.

ROBERT WILLARD HODGSON

KUN, **BÉLA**. See **HUNGARY** (After World War I).

KUNGSHOLM. See **SWEDEN** (Transportation).

KUNLUN, *KOON LOON*, or **KUENLUN**, **MOUNTAINS**, extend about 2,300 miles from the Pamir Highland in central Asia east to the border of China. See **CHINA** (color map). Large glaciers spread over many of the highest areas. The western section forms a single chain, with peaks as high as 20,000 feet. Toward the east, the system spreads out and splits, its ranges enclosing the Tsaidam and Koko Nor basins. The Altyn Tagh and the Nan Shan form Tibet's northern boundary. Ulugh Muztagh (25,340 feet), which stands in northern China, is the highest peak in the Kunlun Mountains.

J. E. SPENCER

KUOMINTANG. See **CHIANG KAI-SHEK**; **CHINA** (Government); **SUN YAT-SEN**.

KURA RIVER. See **CASPIAN SEA**.



Kurdistan Is Governed by Turkey, Iraq, and Iran.

KURDISTAN, *KOOR dih STAHN*, is the Persian name for "the land of the Kurds." It refers to a region of western Asia which is ruled by Turkey, Iraq, and Iran. Kurdistan covers an area of about 56,000 square miles, and has a population of about 2,500,000. It is mainly a land of high mountains. But the basins of the Tigris and Euphrates rivers in Kurdistan are low. This part of Kurdistan is watered by two rivers called the Greater and the Lesser Zab. Grains and warm-climate fruits are the main agricultural products.

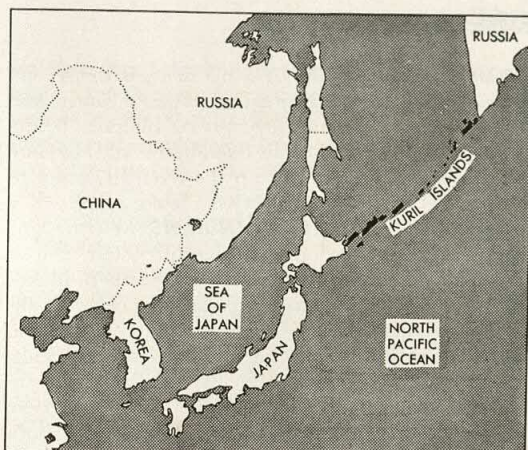
Most of the inhabitants of Kurdistan are Kurds. They are a rugged people of Islamic faith. The Kurds are much like the Iranians in race and language. Many wealthy Kurds are wanderers. They live in tents and are skilled breeders of cattle, horses, sheep, and goats. Among them are the fierce tribal chiefs who have often been the terror of their Armenian neighbors to the north.

The chief cities of Turkish Kurdistan are Bitlis, Van, and Diyarbakır. Kermanshah is a leading city of the Iranian area, and Kirkuk and Sulaimaniya are the most important cities in the part of Kurdistan ruled by Iraq.

The Turks killed many Kurds during World War I. At the end of the war, the Kurds asked for their independence from Turkey, but it was not granted. In 1925, the Turks crushed a Kurdish attempt to secure an independent government, and executed the leaders of the movement. Since then, Kurdistan has remained divided among Turkey, Iraq, and Iran. SYDNEY N. FISHER

See also ARMENIA.

KURIL, KOO reel, ISLANDS stretch in a chain 650 miles from Hokkaido, Japan, to the Kamchatka peninsula of Siberia. For location, see RUSSIA (color map). The chain includes 30 large islands, 20 smaller islands, and a number of reefs and rocks, with an area of about 3,944 square miles. The Japanese name for the islands is *Chisima* or *Thousand Islands*. Except for islands at each end, the Kurils were formed by volcanoes. Half the 40 craters in the islands show signs of activity. Lofty mountains, partly covered with trees, grass, and sedge, rise on these islands. A cold current that flows south along the coasts makes the climate foggy, stormy, and much colder than other places in the same latitude. Many otter and seals once lived on the Kurils, but these have become scarce through too much hunting. Bears, wolves, and



The Kuril Islands Lie Between Japan and Siberia.

other smaller animals still live in these mountains.

About 15,000 people live in small villages on the islands. They export timber, furs, and fish. When the Dutch discovered the Kurils in 1643, the islands were inhabited by the Ainu, a primitive people. Russian fur traders established a station on the Kurils in 1795. By 1830 they claimed control of the northern and central islands. The Kurils came under Japanese rule in 1875, when Japan traded Russia the southern half of Sakhalin Island for the Kurils. Russia took control of the Kuril Islands at the end of World War II, by agreement with the United States and Great Britain. EDWIN H. BRYAN, JR.

KURLAND, ROBERT. See BASKETBALL (Great Basketball Players and Coaches).

KUROSHIO. See JAPAN CURRENT.

KURUSU, koo roo soo, SABURO (1888-1954), was a Japanese diplomat. He was sent to Washington, D.C., in 1941. Kurusu took part there in the negotiations that preceded Japan's attack on Pearl Harbor. It is clear that Kurusu knew of his government's general schedule of action, but he probably did not know of the specific plan to attack Pearl Harbor. Kurusu was born in Yokohama. He entered the Japanese diplomatic service in 1910, after graduating from the Tokyo Commercial College. He was ambassador to Germany in 1939 and 1940, and signed the Berlin Pact. MARIUS B. JANSEN

KUSAIE, koo SY ay, is the easternmost of the Caroline Islands in the Pacific Ocean. It is part of the United States Trust Territory of the Pacific Islands. About 1,700 Micronesians live on the island, which has an area of 42 square miles. The people are Christians. The island has a heavy rainfall, and is covered with thick forests and high mountains. The chief port, Lele, is on the eastern coast. EDWIN H. BRYAN, JR.

See also CAROLINE ISLANDS.

KUSCH, kush, POLYKARP (1911-), a German-born physicist, became known for his research in atomic and nuclear physics. He shared the 1955 Nobel prize in physics with Willis E. Lamb (see LAMB, WILLIS E.). The two men, working independently, found variations in the magnetic strength of electrons spinning around atomic nuclei (see ELECTRON). Kusch was born in Blankenburg, Germany. He taught at several American universities, and became a professor at Columbia University in 1946. R. T. ELLICKSON

KUSKOKWIM RIVER

KUSKOKWIM RIVER, *KUS koh kwim*, is the second largest river in Alaska. It rises in the Alaska Range, and flows southwest 600 miles, emptying into the Bering Sea at Kuskokwim Bay. The river drains 50,000 square miles. Small ships can sail up the river 400 miles to McGrath. For location, see ALASKA (color map).

KUTENAI, or **KOOTENAY INDIANS**, *KOO tee nay*, formed a tribe in what is now southeastern British Columbia, northwestern Montana, and northern Idaho. Their way of life somewhat resembled that of the Plains Indians, although they lived in a mountainous region and are considered mountain Indians. Kutenai bands, each made up of a few families, lived by hunting, fishing, and collecting wild plants. They built shelters of skins and rushes, and traveled in dugouts and bark canoes. The Kutenai had little personal property, and maintained few class distinctions. But the *shamans*, or medicine men, once had great power.

Many of the Kutenai became Roman Catholics in the 1800's. They acquired horses and gradually took up farming, lumbering, and cattle raising like their white neighbors. The Kutenai now live on reservations in Montana, Idaho, and British Columbia. MELVILLE JACOBS

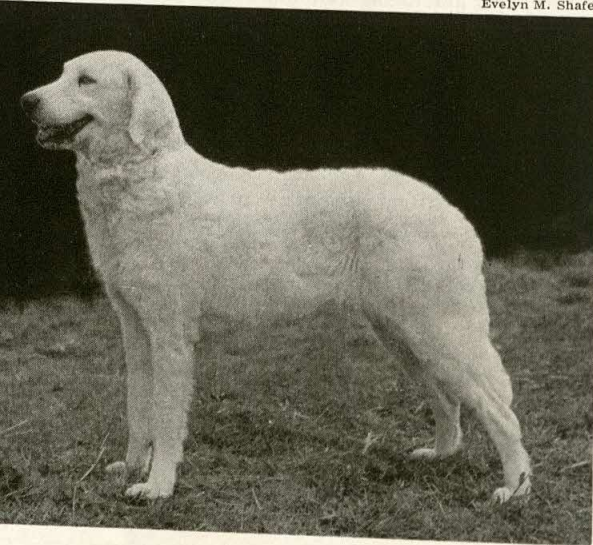
KUTZTOWN STATE COLLEGE is a coeducational state teachers college in Kutztown, Pa. Courses in art education, library science, and teacher training lead to the bachelor's degree. The school was founded in 1860. For enrollment, see UNIVERSITIES AND COLLEGES (table).

KUVASZ, *KOO vahz*, is a large, powerful dog, whose ancestors came from Tibet. The kuvasz was chiefly developed in Hungary. The name comes from a Turkish word that means *armed guard of the nobility*. The kuvasz has a broad, heavy-boned body, but walks with a light-footed gait. The dog's coat is pure white, and grows long on the neck and flanks, and fairly short and wavy on the body. The male stands about 26 inches high; the female, 25 inches. Average weight for a kuvasz is about 70 pounds.

JOSEPHINE Z. RINE

The Kuvasz enjoyed its greatest popularity as a guard and hunting dog among the Hungarian kings and nobles in the 1400's.

Evelyn M. Shafer



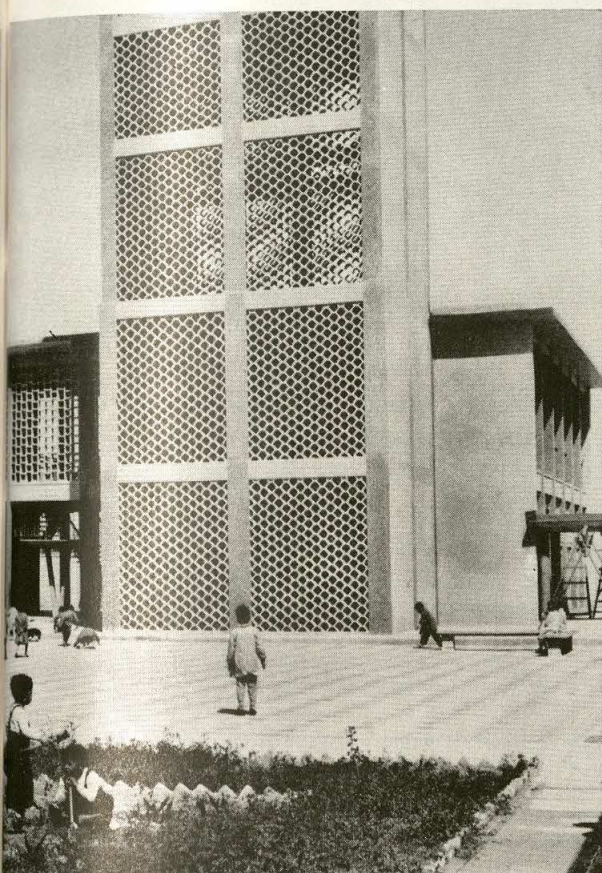
KUWAIT, *koo WITE*, or *koo WAIT*, is an independent Arab country on the Arabian Peninsula. The map shows that it stands at the northern end of the Persian Gulf. Iraq borders Kuwait on the north and west, and Saudi Arabia and the Kuwait-Saudi Arabia neutral zone lie to the south. The country covers 8,000 square miles, and has a population of about 170,000. A sheik rules Kuwait, but the country has been under official British protection since 1914. The city of Kuwait is the capital and largest city (see KUWAIT).

Desert covers most of Kuwait. All the drinking water is obtained by filtering ocean water. The country's important oil resources include one of the largest oil pools in the world. Kuwait ranks fifth among the countries of the world in the production of petroleum. Other important industries include fishing, pearl diving, and the construction of Arab *dhow*s, or boats. A few irrigated areas in the country produce dates, grains, vegetables, and other farm products.

Kuwait (pop. 99,438) is the capital and only large urban area in the country. The city provides harbor facilities for oil tankers and for the country's fishing fleets. Ahmadi (pop. 7,205) serves as a residential community for the oil fields. A pipeline leads from Ahmadi to the port of Mena al Ahmadi (pop. 4,250). Other towns in Kuwait include Assalamiah (pop. 4,080), Jahra (pop. 2,022), As Subbiyah (pop. 1,789), Fantas (pop. 1,020), and Az Zor (pop. 1,000).

GEORGE W. HOFFMAN

See also FLAG (color picture, Flags of Asia); MONEY



Gulf Oil Corp.

Kuwait's Rich Oil Resources have made it possible for the government to build up-to-date schools in the city of Kuwait.

(table, Values of Monetary Units); PERSIAN GULF; PETROLEUM (table).

KUWAIT (pop. 99,438; alt. 15 ft.) is the capital and chief city of the sheikdom of Kuwait. It stands on the

northwest coast of the Persian Gulf. The city has a good harbor, and serves as a trade center for many cities along the Persian Gulf. The sheikdom's vast oil fields make Kuwait a major oil port. Many of the people work in the city's fishing fleets or shipyards. Kuwait was founded in the early 1700's.

DOUGLAS D. CRARY

KUYBYSHEV, *KOO ih bih shuf* (pop. 806,000; alt. 570 ft.), is an important Russian manufacturing center, and one of the chief ports on the Volga River. For location, see RUSSIA (color map). A large oil field and rich grain fields nearby add to its importance. In 1958, the world's largest hydroelectric power plant was dedicated here. The power installation includes a $\frac{3}{4}$ -mile-long dam across the Volga that forms an artificial lake $1\frac{1}{2}$ times the size of Great Salt Lake. Manufactured products include aircraft, food products, and locomotives. The city was called Samara until 1935.

KWAJALEIN, *KWAHJ uh lihn* (pop. 1,000), is the world's largest atoll, or ring of coral islands. It lies in the Marshall Islands, 2,123 nautical miles southwest of Honolulu, Hawaii. Kwajalein has over 90 islands, with a combined land area of about six square miles. The atoll is 190 miles in circumference, and surrounds a lagoon with an area of about 840 square miles, the world's largest atoll lagoon.

Japan took Kwajalein from Germany in 1914. In World War II, Japan fortified the atoll, and built airstrips and a seaplane base on Kwajalein. The United States captured Kwajalein in February, 1944, and used it as a navy base during the rest of World War II. Kwajalein is now an airport in the U.S. Trust Territory of the Pacific Islands.

EDWIN H. BRYAN, JR.

KWAKIUTL INDIANS, *KWAH kee OO t'l*, formed a Northwest Coast tribe famous for their *potlatches*. At these festivals, rich chiefs gave away or destroyed enormous quantities of valuable property, including slaves, in order to display their wealth.

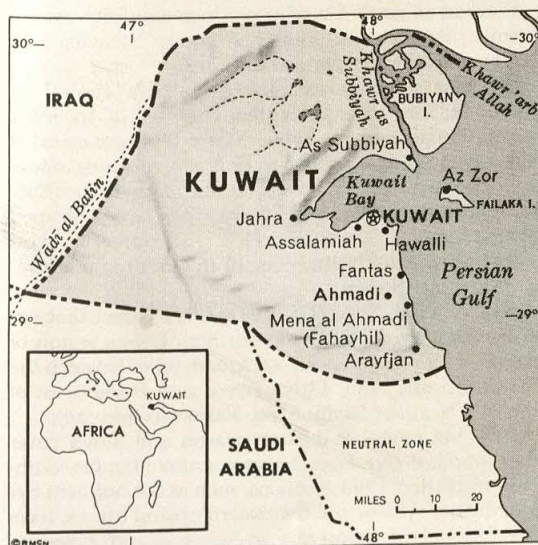
The Kwakiutl lived in many small villages on northern Vancouver Island and on the nearby mainland of British Columbia. They had a stratified social system. Wealthy families owned slaves and often maintained skilled craftsmen in their households. The Kwakiutl built fine houses, and made beautiful wooden canoes, boxes, dishes, masks, and totem poles. Their way of life resembled that of other fishing tribes of the Pacific Northwest (see INDIAN, AMERICAN [Northwest Coast Indians]). But the Kwakiutl have become better known because of the writings of the anthropologists Ruth Benedict and Franz Boas.

Little remains today of the rich Kwakiutl culture. Most of the people fish and farm on Vancouver Island and other parts of British Columbia.

MELVILLE JACOBS

KWAME NKRUMAH. See NKRUMAH, KWAME.

KYANITE, *KY uh nite*, or **CYANITE**, *SY uh nite*, is a pale-blue, or white-and-blue, mineral found in rocks that divide along parallel planes. Kyanite consists chiefly of aluminum silicate, and always occurs in crystalline form. It is found in Australia, East Africa, and India. The mineral can be polished into a brilliant stone often used for ornaments and jewelry. Because it does not fuse easily with other materials, kyanite is also used for refractories, or insulators, in the glass and ceramics industry.





Fujio Matsugi

The Annual Gion Festival in Kyoto includes a parade with magnificently decorated floats, left. The Kinkakuji Temple, above, overlooks a small lake in Kyoto.

KYD, *kid*, **THOMAS** (1558-1594), an English dramatist, wrote plays which appeared during William Shakespeare's early years in London. His greatest contribution was *The Spanish Tragedie*. This play, patterned after the Latin dramas of Seneca, became a model of "revenge" tragedy (see **SENECA**, **LUCIUS A.**). By the time Kyd was 30, it was the most popular tragedy on the London stage. He also wrote *Solymon and Perseda*, *Cornelia*, and possibly an early version of *Hamlet*, now lost. Kyd was born in London.

LEO HUGHES

KYMOGRAPH, *KY moh grahf*, is a recording instrument. It consists mainly of a rotating drum against which a *stylus*, or writing instrument, presses. The stylus records information, usually by making a continuous wavy line on paper mounted on the drum. Many recording instruments used in various fields of science are a form of kymograph. In physics, scientists often use this instrument to measure and make a record of intervals of time.

CLARENCE E. BENNETT

KYNE, *kine*, **PETER BERNARD** (1880-1957), an American writer, wrote the "Cappy Ricks" novels. Cappy, a hero of the Pacific Coast lumber and shipping industries, first appeared in a short story in 1912. The first novel, *Cappy Ricks*, appeared in 1916, and others followed. Kyne also wrote *The Valley of the Giants* (1918) and *Dude Woman* (1940). Many of the stories that Kyne wrote grew out of his experiences as a lumber dealer. He was born in San Francisco, Calif.

FREDERICK J. HOFFMAN

KYODO, *KYO doh*, a Japanese cooperative news service, is a nonprofit organization of about 100 leading Japanese newspapers and the Japan Broadcasting Corporation. Headquarters are in Tokyo. Kyodo was founded in 1945, when the news service Domei disbanded.

KYOTO, *KYOH toh* (pop. 1,204,084), is the fourth largest city in Japan. It lies on Honshu Island, about 27 miles inland from the industrial center of Osaka.

Kyoto served as Japan's capital from A.D. 794 until 1868. It remains a cultural center. For location, see **JAPAN** (color map).

Kyoto is an important religious center, with many Buddhist temples and Shinto shrines housing priceless works of art. One of the most beautiful of the city's palaces, the Golden Pavilion, was built in 1394 and rebuilt in the 1950's. Deputies of the Tokugawa shoguns lived in Nijo Castle from the 1600's to the 1800's. The stately Imperial Palace, first erected in A.D. 794, was rebuilt in 1855.

The city has many institutions of higher education, including the government-controlled Kyoto University, and Doshisha University, a Protestant Christian school.

Workers in small factories produce exquisite textile, ceramic, lacquer, and cloisonné goods. Weaving and dyeing silks is an important industry.

Emperor Kammu established Japan's capital at Kyoto in A.D. 794. He called it *Heiankyo*, meaning *capital of peace and tranquility*. Many Japanese called it *Mikayo*, meaning *imperial city*, or *Kyoto*, meaning *capital city*. Tokyo replaced Kyoto as the capital in 1868. Kyoto was the only major Japanese city which escaped bombing during World War II.

HERSCHEL WEBB

KYUSHU, or **KIUSHU**, is one of the four main islands of Japan. See **JAPAN**.

KYZYL KUM, *kih ZIHL KOOM*, is a desert that lies in the southern Kazakh and northern Uzbek sectors of Russia. It covers about 88,000 square miles between the Syr Darya and Amu Darya rivers, and is southeast of the Aral Sea. For location, see **RUSSIA** (color map).

Low hill ranges and sandy wastes and dunes cover parts of this desert. Loess soils are scattered in the southeastern portion. Other sections, such as the northern Syr Darya River plains and the eastern upland fringes, have been irrigated for crop raising.

J. E. SPENCER

